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ATHLETES AS HEALTH ADVOCATES: AN ELABORATION LIKELIHOOD
MODEL APPROACH TO IDENTIFY THEIR INFLUENCE ON PUBLIC HEALTH
MEASURES

A Thesis
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
Communication, Technology, and Society

by
Sai Datta Mikkilineni
May 2021

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Abstract

Binge drinking has been a significant public health concern on college campuses for several decades. While health communication scholars looked into addressing this issue through a multi-faceted approach, they failed to consider the role of athletes and their potential influence on college students. Thus, this thesis attempts to bridge this literature gap by adopting the theoretical framework of the elaboration likelihood model (ELM) to analyze the underlying cognitive structures in information processing that leads to attitudinal and behavioral change. Data was collected from a large south-eastern University in the United States. Results from 293 respondents show that elaboration and attitudes predicted behavioral intention toward stopping or avoiding binge drinking. However, as the theory advanced, the effect of elaboration on behaviors did not go through attitudes. Likewise, argument strength played no role in how it moderates the association between elaboration and attitudes. Interestingly, parasocial interaction toward the athletes significantly predicted elaboration. Furthermore, race was also examined in this thesis, and results demonstrate no significant relationship in how it functions to affect information processing. Behavioral intention was also integrated into the theoretical model, especially determining its relationship with attitudes and elaboration. This thesis provides theoretical, heuristic, and practical implications for public health institutions.

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I dedicate this thesis to all those individuals who served humanity during the COVID pandemic. Grocery workers, delivery partners, and so many others who were behind the scenes yet were crucial in sustaining this society. Your service will always be remembered, and your legacy will be an example for compassion and human sacrifice.

TABLE OF CONTENTS

	Page
TITLE PAGE.....	i
ABSTRACT.....	ii
ACKNOWLEDGEMENTS.....	iii
CHAPTER	
1. INTRODUCTION	1
Athlete Voice	8
Elaboration Likelihood Model.....	14
Health Persuasion.....	33
Rationale	40
2. METHODS	49
Sample.....	49
Procedures.....	49
Materials/Stimuli.....	51
Measures	54
Data Analysis	58
3. RESULTS	61
4. DISCUSSION	64
Implications.....	74
Limitations	77
Future Directions	78
5. CONCLUSION.....	81
6. TABLES	82

Table of Contents (Continued)

	Page
Table 1	82
Table 2	83
Table 3	84
Table 4	85
Table 5	86
7. FIGURES.....	87
Figure 1	87
APPENDICES	88
Appendix A	89
Appendix B	91
Appendix C	93
Appendix D	95
Appendix E	98
Appendix F.....	105
REFERENCES	106

CHAPTER ONE

INTRODUCTION

Activism has been at the forefront of human civilization and is considered to be a critical component of human behavior. While scholarship studying activism during earliest human societies is virtually non-existent, formal studies have begun looking into its nature through social movements surfacing in the 1960s (McAdam, 1989). Since then, individuals, regardless of their socio-economic status, have engaged in activism. For instance, teachers (Quan et al., 2019), doctors (Loomis, 2015), youth (Velasquez & LaRose, 2014), lawyers (Suh, 2014), and low-income individuals (Rodriguez, 2003) have engaged in a fight for economic, social, health, and political justice. Athletes, among all others, have received an extensive media attention and generated the most public discourse for their activism efforts. For instance, several prominent athletes such as LeBron James, Colin Kaepernick, including others have actively engaged in efforts to condemn police brutality and pervasive racist ideologies (Agyemang et al., 2010; Coombs & Cassilo, 2017). Owing to their popularity and constant media glare, athletes have utilized this opportunity to bring awareness to their political interests and societal concerns.

Historically, athletes have used their voice to censure racial and political inequities within American society. Muhammad Ali was one of the first high profile athletes to have participated in activism. During the height of the civil rights movement, Ali explicitly criticized the American society for their mistreatment of African Americans and other minorities, as well as military involvement in foreign wars (Kaufman, 2008).

Taking notice of him, Tommie Smith and John Carlos brought the world's attention, during the 1968 Mexico Olympics, toward minorities' persecution in the United States (Hartmann, 1996). While wide-spread, prominent athletes' activism gradually declined in the United States after this, it was not until early 2010s that they collectively began utilizing their public image for social use. For instance, several athletes had shown support for Black Lives Matter movement (e.g., LeBron James, Jared Cook, Kenny Britt, Chris Givens, Tavon Austin, & Stedman Bailey) (Coombs & Cassilo, 2017; Sanderson et al., 2016a).

More recently, athletes have used their public influence to promote health issues and concerns that are not inherently political or racial. These attempts to use their voice may be understood as forms of *advocacy* – a term referring to the act of publicly supporting or recommending a particular stance on a topic, issue, person, or process (Guertin, 2017). The adoption of this term – over related terms, such as activism – may help to avoid conflating the historical efforts of athletes to redress political and racial injustices with modern efforts to promote general health and wellbeing. Athletes, among other celebrities, have used their influence to promote healthy behaviors (e.g., mask wearing and social distancing) during the COVID-19 pandemic (Fornek, 2020; Low, 2020). Other critical public health issues that athletes have been part of were drug use and mental health (Affleck, 2019; Paek & Hove, 2012). However, the effect of athletes' attempts to promote such behaviors requires further empirical analysis, which may prove useful to public health institutions for combating major health crises.

Binge drinking is one such public health issue that has been at the top of the

health professionals' agenda. *Binge drinking* is defined as consuming five or more drinks for men and four or more drinks for women, during any one social occasion (Turner et al., 2004). This behavior is correlated with other dangerous behaviors like unprotected sex, rapes, physical altercations, driving under the influence, and damaging property (Wechsler & Nelson, 2001). Despite several interventions made by health workers, binge drinking still remains prevalent among college campuses. According to the CDC, one in six US adults binge drinks about four times a month (Center for Disease Control and Prevention, 2019), but college students are even more likely to engage in binge drinking (Patrick & Terry-McElrath, 2017). In fact, about 40% of the student population engages in binge drinking (Galbicsek, 2019). The continuation of this destructive behavior is largely attributable to peer influence and social norms (Borsari & Carey, 2001; Workman, 2001). Perhaps no context has such an established collective drinking culture than American sports, which regularly features drinking rituals (e.g., tailgating) and alcohol companies' sponsorship. Therefore, the influence of athletes, who are role models within this relevant context (Guest & Cox, 2009; Mertin, 2009), on attitudes and behaviors toward binge drinking could be significant.

While athletes are increasingly using their voice to influence social change (Frederick et al., 2018), the efficacy of their efforts have been widely ignored in the scholarly community. There are studies that show an increase in society's knowledge about an issue due to involvement of an athlete, however, these studies have failed to provide causal explanation for any change in subsequent behaviors. For instance, without any empirical investigation, Brown et al. (2003) claims for health-related knowledge and

attitudes to predict behaviors. However, more recent research provides conflicting evidence to this assertion. This stored information about health-related behaviors is not necessarily put in practice (Petraglia, 2009). Coombs and Cassilo (2017), likewise, emphasized the influential capacity of an athlete without any causal evidence. Although Melnick and Jackson (2002) claim athletes influence beliefs and behaviors, their data provides little evidence to support such claims. Melnick and Jackson (2002), therefore, call for a rigorous testing for analyzing the relationship between “what respondents know” and “what they actually do” (p. 438). At the center of all these claims is the equation of more media coverage to more influential capacity. Concluding that athletes would inherently have an influence on audiences’ attitudes and behaviors due to their increased media image is “problematic” (May, 2009, p. 459). This inference requires further empirical analysis, going beyond “conventional wisdom” (May, 2009, p. 457).

Therefore, the claims of athletes being influential can only be supported through a media effects approach. Despite an increase in media coverage of athlete activism (Schmidt, 2018), scholarship has failed to investigate the effects of this form of media content. Most of the recent research on athlete activism, spanning over the last decade, primarily considered social media discourse (Frederick et al., 2017), news and sport media coverage (Coombs & Cassilo, 2017; Schmidt, 2018), motivations of the athletes for engaging in advocacy (Agyemang et al., 2010; Kaufman & Wolff, 2010), and perceptions of the society toward these actions (Park et al., 2019; Smith & Tryce, 2019). While these lines of research are extremely crucial, analyzing the effects of mediated coverage maintains an equally significant approach to communication scholarship. Since

media has the capacity to influence behaviors (Slater, 2007), and athletes receive a major portion of media space and time (Agyemang et al., 2010), the effect of athletes on society's health-related behaviors demand empirical investigation (Brown & de Matviuk, 2010).

The elaboration likelihood model (ELM) is a suitable framework to measure these changes, transmitted through media, in society. Earlier attitude change literature has established a diverse set of results with respect to the influence of source, message, channel, and recipient on attitudes (see, Petty & Cacioppo, 1986, for a review). Therefore, ELM was developed in response to these conflicting results emerging with no agreement to what variable causes attitude change and if the resultant attitude can predict subsequent behaviors (Petty & Cacioppo, 1986). Since there are individual factors (e.g., prior knowledge, complexity of the message, ability to process the message, etc.) that differ from person to person, the ELM has shifted the focus of analysis from external factors (e.g., source, message, context, etc.) toward the types of cognitive processes those individuals adopt. Petty and Briñol (2014) argue that persuasion is a complex activity, thereby studying these cognitive processes is often more important, than the features of a message, for a better understanding of the efficacy of persuasive communication. ELM posits that individuals process information through central route or peripheral route (Petty & Cacioppo, 1986). ELM provides a better understanding of the underlying mechanisms that operate at the cognitive level of an individual. Since the goal of advocacy is to instill a long-lasting change in policies, attitudes, and behaviors, ELM is a suitable framework to measure the effects of these actions, transmitted through media, on society.

When considering the effects of athletes, one must acknowledge the role of race. Prior scholarship has extensively examined racial component of media representations, including across commentary (Angelini & Billings, 2010; Billings & Eastman, 2003; Eastman & Billings, 2001; Lewis et al., 2019), magazines (Foster & Chaplin, 2017), newspaper articles (Cranmer et al., 2014; Hardin et al., 2004), television news (Dixon & Linz, 2000), and online news (Deeb & Love, 2017). These studies have shown that minorities, especially African Americans, have been consistently portrayed in a negative manner such as less intelligent (Kellstedt, 2000), lawbreakers (Dixon & Linz, 2000), and other stereotyped fashion, such as hailing from single-parent families and struggling financially (Eagleman, 2011). Simply, mass media has played a prime role in depicting minorities in a poor light, which apparently diminished perceptions of their qualifications, concerns, and actions, eliciting comments like “shut up and dribble” for voicing their distress (Sullivan, 2018, para. 7). The undermining of African American’s intelligence and character arguably affects their credibility, which serves as a prominent peripheral cue in ELM, and thus may alter how their attempts at social activism are received (Udah, 2017). However, this relationship between prior media portrayals and subsequent perceptions of African American athletes is understudied. For instance, only a handful of studies (e.g., Ash & Cranmer, 2020; Atwell Seate et al., 2010; Cranmer et al., 2017) have investigated the effects of racialized framing of intellectual and physical abilities on the audience's attitudes and behaviors. While their studies found little racialized effects, a cognitive framework like ELM can bring our attention toward the variables that cause these effects.

Research understanding the causal effects of media images on the society's perceptions is understudied and warranted (Hutchinson & Meekers, 2012). This line of research is important because it affects human relationships in an already complex social system. The purpose of this thesis, therefore, is to utilize ELM to determine the influence of athletes on the public's attitudes and behaviors regarding issues of public health as a function of athletes' race and argument quality. In other words, the effect of prior media frames, that inaccurately depict African American athletes as less intelligent, on their credibility and reputation can be better understood through this thesis. Moreover, while ELM has traditionally predicted behaviors through a change in attitudes, contemporary studies have ignored this critical relationship. Therefore, this thesis adds to the attitude-behavior correspondence by empirically testing if attitudes are a reliable predictor of behavioral intention. Heuristically, this thesis adds to the knowledge surrounding the efficacy of athletes' engagement in advocacy. With an increase in athletes voicing their concerns and political opinions, it is important to study the effects of their advocacy efforts (Sanderson et al., 2016a). The findings of this thesis have practical implications for public health organizations, commercial institutions, and athletes themselves. During a public health crisis, having evidence for an athlete's potential influence can enable them to be employed for health promotions. Commercial firms can use athletes to market emerging health products and services. If a bias against minority athletes is found, educational institutions and other organizations must adopt training practices for individuals and prevent such irrational beliefs to direct judgements and actions.

Thus, prior to accomplishing the purpose of the thesis, three areas of research are

detailed and connected. They are: (a) athlete voice, (b) the elaboration likelihood model, and (c) health persuasion.

Athlete Voice

The majority of scholar attention granted to athletes' attempts to influence social and political realities has focused on their engagement in activism. Athlete activism has been studied extensively by scholars in the fields of communication, sociology, psychology, and health. These scholars consider how athletes utilized their positions in an effort to influence or inspire change within society, including public opinions about specific issues. These issues have traditionally centered on political and racialized issues, but within the modern context have diversified to include health-related issues. Athlete activism in America can broadly be encompassed within two eras: Golden era (1940s-80s) and Modern era (2000-present).

Golden era (1940s-80s). Following World War II, several societies around the world have emerged to fight against imperialism and classist ideologies. Athletes have contributed to this fight for justice. Sandwiched between rising tensions and the society, sport has also embraced the concept of the political playground, by influencing athletes toward activism (Kuhn, 2015). Among them, Jackie Robinson, an African-American athlete who played for Brooklyn Dodgers, was one of the earliest sports personalities to have engaged in activism. His identity, coupled with power imbalances in the American society, led him to show vehement criticism for the lack of civil rights policies (Robinson, 2005), which earned him an iconic status, specifically within African-American community, and generally within minorities (Kuhn, 2015). Muhammad Ali,

while extremely revered for his boxing, is also popular for his opposition for White supremacy in America. His comments against persecution of African-Americans, after rejecting to serve in the Vietnam war, led him to be stripped of the world champion title, sentenced to jail, and also defamed not just by the state but also by its people (Kaufman, 2008).

However, scholarship rigorously began looking into athlete activism beginning with 1968 Mexico Olympics. In the backdrop of a massacre of unarmed students, Mexico Olympics commenced with several nations threatening to boycott as a consequence of Mexican government's atrocities against its citizens (Zolov, 2004). Likewise, prominent American athletes, such as Tommie Smith and John Carlos, participation came with a motivation to protest against America's civil rights violations against African Americans (Hartmann, 1996). After Smith achieving first and Carlos receiving third position in the 200m finals, their *black power salute* – a raised fist with a bowed head – during the medal award ceremony, still exists to be called as the “most iconic sports protest” (Kuhn, 2015, p. 73). In the wake of their protest, Smith and Carlos were banned from the Olympic village and criticized upon their return to the States (Kuhn, 2015).

Moving away from the United States, athlete activism has also been dynamic in the global south. *Democracia corinthiana* was a political movement in the 1980s, pioneered by a São Paulo sports club *Corinthians*, to promote democracy in then military-controlled Brazil (Knijnik, 2014). Sócrates, a famous soccer player who played for that club, was vocal about establishing a democratic rule in Brazil. He even threatened to leave the country to play soccer in Italy if anti-democratic laws were passed. While he

eventually left the country for Italy, he returned to play in Brazil a year later (Knijnik, 2014). In some cases, the rules and structure of the sport that further power imbalances (e.g., segregation) inspired activism from non-athletes. For instance, apartheid policies in South Africa enabled their cricket and rugby teams to be all-White. Their international tours invited massive protests in those regions (Kuhn, 2015). These racist policing by the South African government has resulted in a ban on their cricket team from 1970-1991 by the International Cricket Council (ICC; Gemmell, 2004). These incidents lay evidence for questions that examine sport institutions as political actors (Agartan, 2015).

Modern era (2000-Current). Between the 1980s and shortly after the turn of the century, American athletes have been socially inactive, primarily due to a balanced political environment in the nation (Coombs & Cassilo, 2017). For example, Michael Jordan famously avoided politics during the early and mid-1990s, with his now widely publicized quote “republicans buy shoes, too” (see, Agyemang, 2011, p.437). However, athlete activism would find a resurgence in the 2010s. In 2012, however, a tragic incident of 17-years-old Trayvon Martin being shot dead by a civilian instigated massive protests followed by immense criticism against racial profiling by the society and police alike (Blow, 2012). However, protests actually gained steam only after George Zimmerman, the accused, was exonerated of murder. Triggered by this event, and hundreds of years of abuse and mistreatment by the society, *Black Lives Matter* (BLM) movement was initiated by a few concerned African-Americans (Rickford, 2015). Athletes have provided emphatic support to the BLM movement (Coombs & Cassilo, 2017). In 2014, following the police shooting of Michael Brown, an 18-year-old African-American in

Ferguson, Missouri, several St. Louis Rams players protested against the shooting by raising their hands referring to “hands up, don't shoot” (Coombs & Cassilo, 2017, p. 426). During the national anthem in a 2016 NFL game, Colin Kaepernick of the San Francisco 49ers took a knee as a response to police brutality against people of color (Boykoff & Carrington, 2019). Even now, taking a knee symbolizes the resistance to oppression of the minorities, and still used by athletes across a wide range of sports (Walton-Fisette, 2018).

Activism was not just reserved for professional athletes. In 2015, football players at the University of Missouri voiced their support for an African-American graduate student on campus who was fighting for a safe and inclusive space for minorities. Their demand – University president to step down for his inability to address these issues (Burke, 2015). The protests were initiated by African-American football players, followed by the entire team, including the head coach (Frederick et al., 2017). Following Kaepernick, three football players from University of Nebraska knelt during the national anthem in a 2016 college football game to protest against police brutality (Nohr, 2016). These types of protests remained consistent but sporadic throughout the end of the 2010s but received less public attention as the decade waned.

Athlete activism, however, reemerged as a central topic of social discourse with the killing of George Floyd, which has proliferated activist movements within sport. While the deaths of innocent African Americans in 2020 began with Ahmed Arbery (Fausset, 2020) and Breonna Taylor (Holcombe et al., 2020), the killing of George Floyd was the straw that broke the camel's back. Cheung (2020) called the protests following

Floyd's killing as the most powerful protests, with activists taking the road in all the 50 states and DC. During this period, several high-profile athletes from football (Belson, 2020), basketball (Scheiber, 2020), and baseball (Martin et al., 2020) have done something within their power to protest against police brutality. For instance, players from Milwaukee Bucks had refused to play their NBA playoff game as a sign of protest (Martin et al., 2020). Shortly before kickoff, NFL players from the Atlanta Falcons and Seattle Seahawks took a knee showing their displeasure against hate and racism in the US (Belson, 2020). Similarly, college athletes across a wide range of sports from hundreds of universities nationwide have engaged in activism but on a much larger scale (Nietzel, 2020). Indeed, the impact was not just felt in the United States but around the globe (Rahim & Picheta, 2020). Athletes from sports such as cricket and soccer also showed solidarity toward BLM movement by taking a knee (Levy, 2020; Sarmah, 2020).

So, what makes it significant to investigate the nature surrounding athletes' engagement in social advocacy? Pelak (2005) highlights the visibility that an athlete possesses and, therefore, calls them as "agents of social change" (p. 59). Likewise, Sanderson et al. (2016a) emphasize the influence of athletes on fans and other members of the society. Not just adults but children, in some cases, exclude their own parents, and consider athletes as role models (Agyemang et al., 2010). In addition to playing, athletes can also serve as community agents through "binding the individual to the collective" (Boykoff & Carrington, 2019, p. 3). In other words, athletes can act as a guiding beacon for the society, at least in the matters of equality and justice.

Fans' response toward athletes protesting is ambivalent. While in some cases they

were commended for speaking up (Park, et al., 2019), in other situations, they were blatantly criticized (Boykoff & Carrington, 2019; Kaufman, 2008), even including racial slurs (Frederick et al., 2017). Perhaps, one explanation could be that fans only have an issue with the form of protest rather than with the act of protesting itself. Because taking a knee during the national anthem was seen as a disrespect toward the country and military, athletes embracing this method mostly invited criticism (Frederick et al., 2017; Smith & Tryce, 2019). To add complexity, athletes were also criticized for not speaking up against racial tensions and police abuse. For instance, fans criticized LeBron James for not supporting a democrat competing against a racist politician (Agyemang, 2011).

However, among all these, athletes do have a significant effect on the society. Their influence can be found in matters such as consumers' purchase intentions (see, Dix et al., 2010). However, an often overlooked but socially relevant context of athlete influence is their contributions toward health behaviors and practices (Brown et al., 2003), including cocaine use (Brown & de Matviuk, 2010). For instance, Brown et al. (2003) found that Mark McGwire's association with steroids invited massive public attention toward the health issue. Similarly, Diego Maradona's association with drugs initiated immense public concerns about its effects (Brown & de Matviuk, 2010). Likewise, Magic Johnson coming out with his HIV result increased awareness, changed attitudes, beliefs, and behaviors among heterosexual individuals (see, Quick, 2010). More recently, athletes have been increasingly promoting mental health by including their experiences with depression (Parrott et al., 2021; Wright, 2018). During COVID pandemic, not just athletes, but celebrity coaches like Nick Saban have also used their

popularity and authority to promote healthy behaviors such as social distancing and mask use (Low, 2020). Therefore, it is safe to assume that regardless of an athlete's role in an activity, their mere involvement can call for the public's attention toward an issue. Nonetheless, it is not just important to study how and why athletes engage in advocacy but also responses to those acts, since their reception determines future advocacy efforts (Sanderson et al., 2016a). It is not enough to merely assert effects to these actions, as many content analytic works do (see, Billings & Angelini, 2007; Billings & Eastman, 2003; Dixon & Linz, 2000). For instance, experimental studies testing asserted racialized effects have failed to find support for traditional claims or even evidence to the contrary (Ash & Cranmer, 2020; Atwell Seate et al., 2010; Brown et al., 2019; Cranmer et al., 2017). The elaboration likelihood model, therefore, is one framework that offers promise in accomplishing these aims of understanding audiences' responses to athletes' advocacy efforts and public initiatives.

Elaboration Likelihood Model

Persuasion is subtle, yet found across a wide range of daily affairs (Woodward & Denton, 2014). For instance, persuasion is central to advertising (O'Shaughnessy & O'Shaughnessy, 2004), politics (Milburn, 1991), interpersonal communication (Humă et al., 2020), entertainment-education (Moyer-Gusé & Nabi, 2010), and fundraising (Simons & Jones, 2011). Several theories have sought to understand the efficacy and effect of persuasion on human behaviors. Collectively, these theoretical frameworks have considered language (e.g., language expectancy theory, Burgoon & Miller, 1987), attitudes (e.g., theory of planned behavior, Ajzen, 1985), fear (e.g., extended parallel

process model, Witte, 1992; protection motivation theory, Rogers, 1975), and cognitive processes (e.g., elaboration likelihood model, Cacioppo et al., 1986) as mechanisms of persuasion. The resulting diverse scholarship has led to a fierce debate in socio-psychology research about what causes attitudinal and behavioral changes (Petty & Cacioppo, 1986). This debate centered on the causal influence of attitudes on behavior and resulted from theoretical ambiguities and inconsistent conceptualizations across the numerous persuasion theories (Ajzen & Fishbein, 1972). Therefore, Petty and Cacioppo (1986) justify building the ELM due to conflicting results emerging from studies using a variable-approach (see, Cameron, 2009), and to establish a common framework for those underlying processes that dictate the efficacy of persuasive communication.

Elaboration likelihood model (ELM) falls under the “cognitive processing” paradigm, as it focuses on the “processes” – rather than variables – that lead to persuasion (Cameron, 2009, p. 312). In other words, rather than prioritizing messages, attitudes, or language, ELM highlights the importance of cognitive effort that a recipient invests in the process of persuasion. ELM is a dual-process model (Lizardo et al., 2016), where a message recipient practices one of the two available paths toward persuasion (Lane et al., 2013). Accordingly, a message is either processed through a central route or a peripheral route (Petty & Cacioppo, 1981). While the central route is a cognitively demanding process resulting in persuasion from the processing of issue-relevant arguments (i.e., also known as *high elaboration*), peripheral route imposes little-to-no cognitive energy where persuasion is a product of reliance on heuristic cues (i.e., known as *low elaboration*; Petty & Cacioppo, 1986). Petty and Cacioppo (1986) define elaboration as a process which

enables an individual to carefully think about issue-relevant arguments. In a persuasion context, elaboration refers to the extent individuals analyze issue-relevant arguments and relate it to their prior knowledge structures (Petty & Cacioppo, 1986). Individuals engage in central or peripheral route processing based upon their motivation and ability to engage in elaboration in response to messages. While *motivation* addresses the inherent desire of an individual to engage with a topic, *ability* refers to the individual's intellectual and situational contexts that allow him or her to process a message (Petty & Cacioppo, 1984). In other words, motivation and ability can be paralleled as effort or trying and capacity, respectively (Heider, 1958). When recipients possess both the motivation and ability to process issue-relevant arguments they engage in the central route and examine persuasive messages based upon their information and argumentation strength (i.e., evaluate messages as either weak or strong arguments) (Petty & Cacioppo, 1984). When either (or both) motivation or ability are missing, the peripheral route becomes the means of processing persuasive messages (Petty & Cacioppo, 1986). Those engaged in the peripheral route rely on cues such as source credibility and accountability, or other simple cues rather than issue-relevant arguments (Griffith et al., 2018). See Figure 1 for visual representation of ELM.

General application of ELM. Over the years, ELM has been extensively applied in various social science fields, which have largely found support for the theoretical framework. Seminal efforts examining ELM largely occurred within marketing and advertising, in which persuasion is a fundamental aim (Bitner & Obermiller, 1985; Kitchen et al., 2014). Such research denoted the value for peripheral cues such as

celebrity endorsements (Petty et al., 1983) and the presence of emotional appeals in commercials that influence purchase intention (Lee & Hong, 2016). Health communication and technology scholars have also found the framework useful, with health scholars using it to understand individuals' responses to messages addressing exercise (Rosen, 2000), drinking behaviors (Glassman et al., 2018), physician selection (Cao et al., 2017), drug advertisements (Bhutada et al., 2016), and immunizations (Frew et al., 2016). Technology scholars have used ELM to understand the acceptance of emerging technologies (Bhattacharjee & Sanford, 2006), information systems (Li, 2013), and privacy policies (Zhou, 2017). In addition to these fields, ELM has also been applied to relatively novel contexts such as environmental behavior (Manca et al., 2019), gaming (Cicchirillo & Mabry, 2016; Gong, 2016), tourism (Yoo et al., 2017) and teacher-training programs (Clarke et al., 2012).

ELM was predominantly supported in a variety of contexts. For examples, individuals' motivation and ability have been associated with route selection within the contexts of processing prescription drug advertisements (Bhutada et al., 2016), crowdfunding (Allison et al., 2017), adopting new technologies (Bhattacharjee & Sanford, 2006), using electronic health records (Angst & Agarwal, 2009), addressing privacy concerns (Zhou, 2017), and evaluating pro-environmental messages (Manca et al., 2019). Specifically, these studies confirmed that individuals with motivation (i.e., often assessed via interest or relevance) and ability to process messages engaged in central route processing, whereas those who lacked either utilized peripheral route processing. Likewise, the comparative influence of each route has been supported. For

instance, Lee and Hong (2016) tested the efficacy of emotional appeals (i.e., a peripheral cue) in an advertisement for a ride sharing app. They found that empathetic claims were less important than arguments for determining individuals' adoption and use of the application.

However, not all studies have supported ELM as initially theorized. Mostly, such contrary evidence has centered on the distinctions and relations between the central and peripheral routes. For instance, Li (2013) established that source credibility (i.e., a peripheral cue) *and* quality arguments (i.e., a central cue) simultaneously stimulated cognitive responses in participants in response to persuasive messages on information system acceptance. Likewise, Brewer et al. (2018) found evidence that peripheral cues (i.e., a small pictorial warning on cigarette packs) actually increased cognitive effort in elaboration by the participants – further entwining the understandings of central and peripheral route processing. These findings are in contrast to seminal understandings of ELM, which claim for only central cues to prompt cognitive effort (Cacioppo, et al., 1986; Petty et al., 1983; Petty & Cacioppo, 1984; Petty & Cacioppo, 1986). Additionally, some research has identified novel issues outside the scope of ELM, including the number of exposures to messages. For instance, Frew et al. (2016) found that single exposure to pro-immunization messages were ineffective among African American women who were pregnant, despite the personal relevance to participants' health conditions. It should be noted that although these findings contradict initial theorizing of ELM, the recognition of dual route processing and the curvilinear effects of continuous exposure to persuasive message was recognized decades earlier by Petty and Cacioppo

(1986).

ELM application in sport. Sport is an additional context in which ELM has received recent attention, as it has been applied to a host of issues including the effectiveness of sporting commercials (Fortunato, 2016), affect toward sporting messages (Funk & Pritchard, 2006), evaluations of disabilities (Sullivan & Glidden, 2014), and the efficacy of concussion interventions (Turner et al., 2019) – demonstrating its utility and scope as a framework within Sport Studies. For example, Fortunato (2016), and Kim and Ko (2019) argued that personal involvement moderates the relationship between an independent variable and choice of route (i.e., central, or peripheral route) by an individual (Petty & Cacioppo, 1979; Petty & Haugtvedt, 1980). In studying of Citi bank's advertisements during the 2014 Winter Olympics, Fortunato (2016) argued ELM was an ideal descriptive framework, as Citi used its brand features and the mobile app for highly involved consumers, while athletes and brand logos were used to speak to less involved consumers. Likewise, Kim & Ko (2019) applied ELM in conjunction with multiple theories to study how consumption of sport through various media (virtual reality vs. 2D) influences satisfaction. A portion of their study focused on studying the moderating (i.e., moderated mediation) effect of sport involvement on viewing experience (conceptualized as flow experience in the study). Consequently, they found that highly involved fans discount the peripheral cue (i.e., media type) but focus on the game-related information (i.e., a central cue), while low involved individuals are significantly influenced by peripheral cues such as media types, vividness, and interactivity.

Funk and Pritchard (2006) studied the moderating effect of commitment on sport

messages. While the ELM contends that favorable thoughts are only elicited through pro-attitudinal messages (Petty & Cacioppo, 1986), Funk and Pritchard (2006) found supporting evidence for favorable thoughts emanating through counter-attitudinal messages as well. Under negative conditions (i.e., messages which elicit negative feelings), participants produced an increased number of positive thoughts (Funk & Pritchard, 2006). ELM partially explains this phenomenon in the biased elaboration postulate (Petty & Cacioppo, 1986). According to this, individuals proficient with prior information tend to produce less favorable thoughts and counter-argue more with counter-attitudinal messages. However, Funk & Pritchard's (2006) findings manage to support only a portion of this postulate. Social identity theory (SIT; Tajfel & Turner, 1979) may explain this episode, where committed fans tend to invariably evaluate their team positively (Abrams & Hogg, 1988). Similarly, Park et al. (2008), studying how empathy (i.e., a motivational factor) moderates an individual to volunteer for Special Olympics, found that participants who scored low on empathy engaged in greater elaboration than participants with high empathy. However, high involvement, in the case of low empathy individuals, influenced them to process the messages using a central route. One reason for their conflicting result could be their problematic conceptualization of empathy (i.e., an affective state) to be considered as a motivational factor. Therefore, involvement variable as a moderator is a significant predictor of choice of route (Petty & Cacioppo, 1979; Petty & Haugtvedt, 1980).

Sullivan & Glidden (2014) used the ELM framework to guide their study design. To investigate potential methods in changing attitudes of abled individuals toward

individuals with disabilities, the researchers immersed college students without disabilities into cognitive and affective components involving information about intellectual and developmental disabilities, and also involved a behavioral component where students were required to engage in a swimming activity with Special Olympics swimmers. While the researchers could not pin point toward one component that had the most influence on the students' attitudes, they found a significant combined influence of all components on changing attitudes toward individuals with disabilities.

Turner et al. (2019) studied how the mediation of need for cognition (NFC) on student athletes' ability to process health related information and their knowledge of and access to concussion related information. Consistent with ELM's foundations, Turner et al. (2019) found that lower NFC (i.e., a motivational factor) lead to lower cognitive effort in analyzing text-rich concussion materials. Moreover, the researcher attributed it to the "inherent stay-on-the-field bias" and other cultural expectations that lead them to pay less attention to concussion related information (Turner et al., 2019, p. 15).

Overall, application of ELM within sport is consistent with earlier adaptation of ELM in advertising and marketing, as the theory was applied to analyze consumer behavior. In particular, involvement (i.e., an important determinant of motivation; Petty & Cacioppo, 1986) was extensively studied as a moderator in various consumer and sport studies. Several studies showed support for ELM's predictions that involvement increased cognitive reactions. For instance, works investigating affective outcomes of extreme-sports advertisements (Lee et al., 2011), word-of-mouth influence on sport viewership (Asada & Ko, 2016), sport products purchase intention (Hui, 2017), sponsor-

event attitudes (Alonso-Dos-Santos et al., 2016) and audiences' intention to volunteer in Special Olympics (Park et al., 2008), found evidence that involvement influences motivation to process a message via central route. Nevertheless, ELM has been applied to a sport context in an extremely limited number of published studies. The gross literature gap that this theory can potentially answer so much about the persuasiveness of messages in a sport environment, such as athletes promoting healthy behaviors or condemning racial prejudices, is required to understand the influence of athletes. Therefore, this deficiency of media effects studies involving cognitive processing theories, such as the ELM, calls for a more nuanced scholarship that strengthens our understanding of attitude and behavioral change within the world of sport.

Criticisms of ELM. Even with its claims widely accepted and empirically supported, ELM has received numerous criticisms. Five criticisms are especially pronounced within scholarship. First, there is debate regarding the exclusivity of routes within the persuasion process, as well as the mutual influence and contextual nature of dual route processing. Stiff (1986) questioned the legitimacy of ELM's main tenet that users evaluate a message using only one of two routes (i.e. central or peripheral route). Several studies have demonstrated participants engaged in multiple routes when processing persuasive messages (Stiff, 1986; Zhou, 2017). In response to Stiff (1986), Petty and colleagues (1987) acknowledged that a combination of two routes toward persuasion may be possible. Specifically, they note that individuals processing a message fall on a continuum, ranging from no processing to processing that requires careful consideration of the issue-relevant arguments (Petty et al., 2009). In other words, central

and peripheral processes can function together to influence attitudes. For instance, as elaboration likelihood increases, issue-relevant arguments will possess more precedence over attitudes than peripheral cues (Petty et al., 2009). Yet, critics note that the theory and subsequent clarifications fail to identify the situational features around which both routes are simultaneously adopted (Kitchen et al., 2014; Stiff & Boster, 1987).

Second, some scholars have challenged the ability of the theory to clearly classify features of messages as issue-relevant arguments or peripheral cues (Mongeau & Stiff, 1983; Stiff, 1996). However, in their subsequent scholarship, Petty and colleagues (1993) argue that ELM concerns with the subjective processing styles (e.g., adopting a central or peripheral route depends on the individual) but not objectively defining the cues (i.e., central and peripheral cues). In other words, ELM predicts that a highly motivated and abled individual would process information using a central route (or an individual low on motivation and/or ability engage in peripheral route), it does not predict which cues in the persuasive message are considered to be central or peripheral (Bitner & Obermiller, 1985). For instance, to purchase a football, one individual might consider football size as a central cue, while another might consider it as a peripheral cue. This was similar to Petty and Cacioppo's (1980) study where model attractiveness in a shampoo ad was input as a peripheral cue but was considered as a central cue by the participants. This contradictory finding could be, perhaps, due to the model's visual attributes playing as an issue-argument role for shampoo's functionality. However, ELM does not predict the size of football or model attractiveness to be a peripheral or a central cue uniformly across all contexts. One solution to mitigate this limitation would be to consider the cues'

face validity (Bitner & Obermiller, 1985). Petty et al. (1993) go on to add that motivation and ability can affect which cues are used toward attitude change. In the case of low elaboration (i.e., motivation and/or ability is low), any variable might act as a peripheral cue (Petty et al., 1993). Likewise, in the case of high elaboration (i.e., motivation and ability is high), issue-relevant arguments are primarily considered, and other variables (e.g., source credibility, number of arguments, etc.) act as arguments or skew the ongoing elaboration (Petty et al., 1993).

Third, ELM received some disapproval for its overly descriptive nature resulting from the theory's assumptions (Bitner & Obermiller, 1985; Eagly & Chaiken, 1993; Mongeau & Stiff, 1993). For instance, Choi and Salmon (2003) questioned Petty and Cacioppo's (1981) stance on 'recall as involvement'. Choi and Salmon claim that participants recalling a product from an advertisement as high involvement is more of an assumption than a measured finding. Moreover, the causal relationship between variables toward attitude change is also not empirically supported (Cook et al., 2004; Kitchen et al, 2014; Mongeau & Stiff, 1993). However, in the case of mediation by high involvement, Stephenson et al. (2001) found a causal relationship between argument strength to attitude formation. Nevertheless, multiple scholars criticize ELM for its inability to establish a framework on a priori basis (Eagly & Chaiken, 1993), thereby limiting its effectiveness to merely describing the process after it materializes rather than predicting under what specific circumstances would a particular event occur (Cook et al., 2004).

Fourth, the conceptualization of strong and weak arguments has been criticized for being vague and circular in nature. O'Keefe (1990) argued that ELM establishes no

criteria or standards for what constitutes a strong or weak argument. Instead, strong arguments are determined to be those which are deemed effective and weak arguments are those which are not. As such, argument strength varies from study to study depending on the sample, research topic, and the context of the research (Kitchen et al., 2014). Moreover, the quality of arguments within the framework are not based on their intrinsic characteristics but their effects on participants – a circular chain of reasoning that becomes difficult to falsify. However, Petty et al. (1993) added that argument quality is a methodological tool (i.e., something to be manipulated within study design). They claim that ELM sought to understand under which circumstances an individual thinks and elaborates about issue-relevant arguments (Petty et al., 1993). Despite their reasoning, Choi and Salmon (2004) argue that this lack of delineation limits the theory's practical utility.

Finally, ELM was also criticized for assigning multiple roles to variables. For instance, depending on the context, variables that often mediate the elaboration likelihood, such as source credibility, source attractiveness, and involvement, might act as persuasive arguments (i.e. as part of central cue) or peripheral cues (Petty et al., 1987). Likewise, variables that may be deemed as peripheral cues (e.g., speaker appearance or characteristics) can also be classified as input variables and arguments (i.e., known as the multiple roles postulate) (Petty et al., 1987). This contradiction conflates whether such variables determine motivation and ability or are utilized in their absence as cognitive shortcuts or potentially elaborated upon as arguments. This question of the key mechanisms and roles of variables within ELM was raised by O'Keefe (1990). However,

most of the criticisms addressed in this section can be discounted if ELM is considered as a descriptive model rather than as an analytical model (Cook et al., 2004). Under such assumptions all the issues, such as causal flow, multiple roles for the variables, would cease to exist (Cook et al., 2004). Despite all these criticisms and limitations, ELM withstood its fault-findings and still receives widespread acceptance as an influential, necessary, and critical theory for understanding the processes leading to attitude and behavioral change (Baran & Davis, 2015; Bitner & Obermiller, 1985; Kitchen et al, 2014; Pasadeos et al., 2008; Szczepanski, 2006).

Components of ELM. There are various components and concepts within ELM that require explication prior to the theory's application to the purpose of this thesis.

Message Manipulations. One of the key aspects of the ELM is that it recognizes issue-relevant arguments in a message, as well as the heuristic cues that surround the said message (e.g., source, context, emotional reactions, etc.) (Petty & Cacioppo, 1981). Per ELM, arguments are described as the chunks of information that are relevant to a "person's subjective determination of the true merits of an advocated position"(Petty & Cacioppo, 1986, p. 16). In other words, what constitutes an issue-relevant argument culminates from a subjective evaluation of a person and is not standard across different individuals or contexts. For instance, one individual might consider the aerodynamic features of a football as central to their decision in purchasing it, while another person may evaluate the cost factor for their purchase. Therefore, this inability of ELM to explicitly define the construct of issue-relevant argument has received criticism (see, Areni & Lutz, 1988; O'Keefe, 2003). Despite all this, subsequent scholarship adopted

argument quality in their methodology and have found wide-spread acceptance in the persuasion literature.

Central to message evaluation within ELM is the manipulation of strong and weak arguments. When an individual reads a strong argument, they mostly elicit favorable thoughts and feelings. On the other hand, a weak argument mostly produces unfavorable thoughts and feelings. The quality of arguments is identified only by observing their effect under the conditions of high elaboration (O'Keefe, 2003). In other words, this determination can be made only via manipulation checks. A more recommended approach to analyze the quality of arguments, when used as an independent variable, can be achieved through pre-testing them (O'Keefe, 2003; Petty & Cacioppo, 1986). A set of chosen arguments can be presented to a sample, which, when read closely, strong arguments elicit favorable thoughts while weak arguments elicit unfavorable thoughts (Petty & Cacioppo, 1981).

Studying the effects of variation in argument quality is important since the nature of information presented subsequently predicts the extent of elaboration. If strong arguments are presented, it enables the reader to engage in high elaboration and form an attitude that is long-lasting and a predictor of behavior. If weak arguments are presented, and the individual is motivated and able to process the message, a boomerang effect can be seen. Therefore, research adopting ELM should manipulate the features of a message (i.e., strong vs. weak arguments) to identify if people are being persuaded on a certain issue via the central route or peripheral route. This will assist practitioners in designing campaigns (e.g., public health, social justice, etc.) that will efficiently shape audiences'

attitudes and behaviors.

Motivation and Ability. Petty and Cacioppo (1986) state that motivation and ability variables determine to what extent a message is elaborated (i.e., high or low elaboration). Toward the route to persuasion, several studies have extensively used motivation and ability variables as moderators (Schumann et al., 2012). Cook et al (2004) add that, “motivation relates to the willingness to exert effort in assessment of the merits and attributes associated with the persuasive message” (p. 317). There are numerous variables that are believed to contribute toward an individual’s motivation (see, Petty & Cacioppo, 1986). For instance, if the subject of the message is of concern or deemed relevant, the individual is motivated to process the message (e.g., a cancer patient reading a brochure on chemotherapy treatment). Likewise, one’s need for cognition (NFC; to what extent does the individual have a need for exerting cognitive effort) will also affect motivation (Petty & Cacioppo, 1986). Additionally, the influence of involvement and personal relevance on motivation is widely studied (Celsi & Olson, 1988; Cicchirillo & Mabry, 2016; Petty & Cacioppo, 1984). In the recent age of digital environment, “information overload” is also being considered to affect motivation (Swar et al., 2017, p. 2). Yet, motivation alone is not sufficient for high elaboration (i.e. central processing).

The ability to process a message is also critical for determining the route utilized to process messages (Petty & Cacioppo, 1981). Ability refers to the capacity of an individual to elaborate a message (Petty & Cacioppo, 1986). For instance, if the message is incomprehensible or esoteric to the reader, then the individual does not have the ability to process it (Eagly, 1974). If the individual has no “schema or framework for relating it

to their existing beliefs” (Petty & Cacioppo, 1981, p. 265), or if the message is in a different language, then the ability to process is hindered. Petty et al. (1976) state that distraction can also affect an individual’s ability to evaluate a message. Therefore, ability can be surmised as the unique combination of message, individual, and situational characteristics that facilitate the understanding and analysis of a message. Collectively, the presence of motivation *and* ability is imperative for high elaboration (i.e. central processing; Petty & Cacioppo, 1979). On the other hand, low motivation and/or low ability will result in low elaboration (i.e. peripheral processing; Petty & Cacioppo, 1981). These concepts are often assessed via personal involvement (considered a motivational variable) or prior knowledge (consider an ability variable) and have been found to influence the route by which individuals process messages (Petty & Cacioppo, 1986).

Routes to Persuasion. As a dual processing theory (see, Lizardo et al., 2016), ELM posits two routes to persuasion. Petty and Cacioppo (1981) claimed that prior attitude change theories’ principles can be reduced to one of these two distinct routes – central route and peripheral route. As aforementioned, motivation and ability determine which route individuals engage in (Petty & Cacioppo, 1981), with motivated and abled individuals adopting the central route (Petty & Cacioppo, 1984) and a lack of either motivation and/or ability leading to the adoption of the peripheral route (Petty & Cacioppo, 1986). Each route is summarized below.

First, the central route is a product of careful and thoughtful elaboration about the issue-relevant arguments (Petty & Cacioppo, 1986). For example, it involves an intentional process of evaluating the pros and cons of the issue (Petty et al., 1983). In the

central route, according to Petty and Cacioppo (1984), the strength of arguments presented in a persuasive message determine the direction of attitudinal change. If “cogent and compelling” arguments are presented, attitude change occurs toward the direction that the message requires (Petty & Cacioppo, 1984, p. 70). However, if the arguments presented are weak and dubious, then the message is counter-argued to the point where a “boomerang” effect is seen – questioning the message and the attitude shifts inverse to the message objective (Petty & Cacioppo, 1984, p. 70). Since the central route requires issue-relevant elaboration (Petty & Cacioppo, 1981), the attitudes formed through this route are long-lasting and a strong predictor of behavioral change (Petty & Cacioppo, 1986). Simply, when individuals believe they have assessed arguments on merits, they are more steadfast in their conclusions, and are more likely to hold those attitudes for longer periods (Petty & Cacioppo, 1986).

Second, the peripheral route is a consequence of non-issue relevant processing using peripheral cues, or, heuristic elements (Chaiken, 1980; Petty et al., 1976). For instance, individuals utilizing the peripheral route may consider source attractiveness, word count, jingles, or pictures as heuristic cues that inform their attitudes and behaviors toward the subject of a message (Baran & Davis, 2015; Petty & Cacioppo, 1981; Petty & Cacioppo, 1986). Miller et al. (1975) point out that people relying on heuristics happens for a very good reason – that people are limited in ability to process information due to time and capacity constraints. Therefore, with these boundaries, individuals aim to quickly process information using heuristics (Baran & Davis, 2015), raising the concept of cognitive misers (Taylor, 1981). During an exercise of obtaining knowledge, and

subsequently emulating behaviors, people tend to favor and adopt actions that allow them to expend a lesser amount of cognitive resources (Corcoran & Mussweiler, 2010).

Therefore, their decision to employ shorter and easier path results in receiving skewed information (Payne et al., 1996). These shortcuts are primarily attributed to a limited supply of time, knowledge, attention, and cognitive resources (Simon, 1956).

Consequently, attitudes emerging through the peripheral route tend to be temporary and a poor predictor of behavior, as they are based on determinants that are not central to a given issue (Petty et al., 1983).

Outcomes of ELM. The initial and central function of ELM is to understand the processes leading to attitude change, stimulated by persuasive messages (see, Petty & Cacioppo, 1981). In the context of ELM, Petty and Cacioppo (1986) define an *attitude* as “general evaluations people hold in regard to themselves, other people, objects, and issues” (p. 4). Additionally, ELM identifies an attitude only as a general evaluation of an object (e.g., “Football is good”, “Smoking is bad”) but not cognitive, affective, or behavioral responses (e.g., “I like football”, “I do not enjoy smoking”) (Petty & Cacioppo, 1986). Although ELM is primarily concerned with how persuasive communication influences attitudinal change, ELM also represents how resultant attitudes from the central route or peripheral route can estimate the strength and direction of behaviors (Petty & Cacioppo, 1986). Within ELM research, *behavior* may be understood as a tangible action of doing something. For instance, ELM was used to study behaviors in the context of AIDS (Dinoff & Kowalski, 1999), cheating in online gaming (Wang et al., 2019), and drunkorexia (Glassman et al., 2018). The framework and

subsequent works demonstrate its influence on a variety of behavior (Petty & Cacioppo, 1986). However, subsequent empirical studies employing ELM seldom advanced their research into studying if attitudes could shape behaviors – underlying the value of this thesis for addressing the conversation on attitude-behavior correspondence (see, Petty & Cacioppo, 1986).

As a dual processing theory, ELM posits that individuals undergoing persuasion through central or peripheral routes might arrive at a similar attitudinal position (Petty & Cacioppo, 1981). For instance, for purchasing a football, one individual might consider issue-relevant information, and another individual might consider peripheral cues. However, regardless of their choice of route, both individuals may end up purchasing it, therefore arriving at the same condition. Nonetheless, ELM predicts that the strength of attitudinal change through central route to be enduring, while attitudinal change via peripheral route to be fleeting (Petty & Cacioppo, 1986). Similarly, ELM predicts that central route processing is a strong predictor of behavioral change as opposed to peripheral route processing which is a weak predictor of behavioral change (Petty & Cacioppo, 1986). For instance, if an individual has the motivation and ability to scrutinize issue-relevant information (i.e., central route) such as health data and statistics about alcohol consumption, the individual forms an attitude toward drinking that is enduring and resistant to future counter-persuasion (Petty & Cacioppo, 1986). On the other hand, if an individual does not have the motivation and/or ability to scrutinize a message, they develop an attitude toward drinking using heuristic cues such as source attractiveness, source credibility, etc. (i.e., peripheral route) which is weak and less resistant to counter-

persuasion in the future (Petty & Cacioppo, 1986). Collectively, these concepts and ELM have consistently been utilized to offer insight into a variety of contexts, but perhaps most often in health persuasion literature.

Health Persuasion

Public health has possessed a policy significance within American society for several decades. Health communication, in which health persuasion is central to its objectives, involves shaping people's attitudes and behaviors toward a healthy lifestyle (Shen et al., 2015). Various health campaigns for societal issues such as AIDS, condom use, and substance use, have been widely publicized during the later-half of the 20th century (Petty et al., 2009). Prior literature has studied the efficacy of health communication through narratives (Tallapragada & Cranmer, 2020), commercials (Byrd-Bredbenner & Grasso, 2000), entertainment (Shen & Han, 2014), public service announcements (PSA; Myrick & Oliver, 2014), and brochures (Perloff & Ray, 1991). However, research has shown while people possess adequate health knowledge, it is not necessarily put into practice (Petraglia, 2009). For example, within sports, athletes' knowledge of concussions has been widely documented but their self-reporting of concussion symptomology remains relatively low (Cranmer & LaBelle, 2018; McCrea et al., 2004; Sanderson et al., 2017b). Hence, there is a need for empirical evidence showing beliefs and attitudes toward healthy behaviors actually induce behavioral change (Fishbein et al., 2002).

Explanation for this non-progression from attitudes toward applying them as a behavior could be answered through reactance theory. Health campaigns, in most cases,

tend to treat or prevent common unhealthy behaviors, and this demand to change can be seen as a “threat to freedom” (Dillard & Shen, 2005, p. 145). In other words, attempts to promote these healthy behaviors may be perceived by the individuals as an attempt to unduly influence their personal lifestyles. Therefore, individuals consuming these messages may counter-argue and react against what is advocated for in health promotions (Dillard & Shen, 2005, Fishbein et al., 2002, Petty et al., 2009; van Koningsbruggen et al., 2009). In addition, ELM’s bias postulate argues that a hint of persuasion can erode any sort of influence on the audience (Petty & Cacioppo, 1986). Simply, if individuals believe others are attempting to persuade them, they may resist those efforts more forcefully. Perhaps one solution to mitigate this issue can be implicit rather than explicit persuasion (van Koningsbruggen et al., 2009). For example, rather than directly addressing the public to change their health behaviors (i.e., *you* need to immunize for better long-term health), health campaigns can adopt certain approaches where an exemplar can be utilized (i.e., immunized people tend to stay healthy for a longer time). These approaches are often used in narratives, where the intended message is implicitly embedded into its story (Shen et al., 2015). Because direct and overtly persuasive attempts have shown mixed evidence (Petty et al., 2009), researchers must consider persuasive communication that is implicit in the context of health messages. Despite this understanding, there is conflicting evidence to support the notion that narratives can be effective in health persuasion. For instance, Shen et al.’s (2015) meta-analysis found that narratives had a small impact on persuasion. In contrast, other studies (Tallapragada & Cranmer, 2020; Zhou & Niederdeppe, 2016) provide little support for a standard effect of

narratives on the audience.

Another viable approach that is germane within the sports context is press conferences or press releases, which are largely informational rather than persuasive events (Clayman & Heritage, 2002). These events serve as opportunities to gain insight into athletes' thoughts and experiences related to sports and beyond (e.g., political or popular culture). Several nations (e.g., Germany, Spain, United Kingdom, among others) have used press conferences and press releases as a mode of communication for persuading hand washing as a healthy behavior (Magiorakos et al., 2009). Moreover, recent evidence suggests that news media consumption is significantly related to support for public health measures (De Coninck et al., 2020). Prior related research shows informational messages to be more persuasive for people high in involvement and need for cognition (Braverman, 2008). Therefore, health institutions and governments utilize these news media events as a platform for communicating (and, discreetly persuading) healthy behaviors, without actually foregrounding their intentions to persuade, which will otherwise see a boomerang effect (Fishbein et al., 2002). In other words, health messages can be masked as information rather than persuasion. Critics may argue that this approach falls under the boundaries of deception and goes against the ethical principles of journalism (Nelson et al., 2009), however, such manipulations are fundamental for the success of these campaigns (Randolph & Viswanath, 2004), especially in the matters of public health. More empirical analysis is needed to verify press releases as a valid alternative to commercials and PSAs for influencing the public's approach to health behaviors. This emphasis is especially relevant as health practitioners assert the value of

print mediums as an influential means of transmitting health information (U.S. National Library of Medicine, 2019), yet empirical research has primarily focused on audio and visual mediums as sources of influence (Shen et al., 2015). Earlier, health scholars have looked at prevention programs in the context of smoking (Flynn et al., 1994), unsafe or unprotected sex (Lapinski et al., 2009), obesity (Enwald & Huotari, 2010), including binge drinking (Pilling & Brannon, 2007)

Binge drinking. Binge drinking is one of the most significant concerns of public health in the United States (McGinnis & Foege, 1993) and a central focus of many health persuasion initiatives and campaigns (DeJong, 2002). *Binge drinking* is defined as consuming five alcoholic drinks for men and four for women or more in a single setting (Wechsler et al., 1998). This type of behavior is correlated with involvement in other dangerous behaviors like unprotected sex, rapes, physical altercations, driving under the influence, and damaging property (Wechsler & Nelson, 2001). This behavior is especially connected to sport (collegiate and professional), as sporting culture and rituals (e.g., tailgating) often include and encourage binge drinking. Extant research has demonstrated that binge drinking is common and is believed to be a normative behavior (for a review, see Kuntsche et al., 2005). Traditional and social media consumption (Atkin et al., 1983; Brunborg & Andreas, 2019), and peer influence (Borsari & Carey, 2001; Workman, 2001) are the most common factors for binge drinking. Another often understudied element that encourages binge drinking is sensation seeking. This trait is the motivation to seek sensation – or thrill – through the activity (Rosenbloom, 2003), and can predict the indulgence of students in binge drinking. For instance, D'Alessio et al. (2006) found

significant differences in sensation seeking desires between social drinkers and binge drinkers. Despite several interventions made by health professionals, binge drinking still remains a major health concern.

Binge drinking has been a focus of health communication research in the recent decade, where several studies have tested the efficacy of PSAs (Baek et al., 2013), narratives (Zhou & Shapiro, 2017), fear appeals (Jessop & Wade, 2008), statistics (Kang & Lee, 2017), interpersonal communication (Hendriks et al., 2020), and parental influence (White et al., 2006). Studies looking at these factors have shown inconsistent results. For instance, while Yu et al. (2010) found gain-frames encourage preventive action, Kang and Lee (2017) found loss-frames to be more effective, at least for non-binge drinkers. Baek et al. (2013) found no significant interaction between message frames (gain vs. loss) and counterfactual thinking to affect binge drinking attitudes. In other words, an additive counterfactual thinking (e.g., I should have purchased that car) or subtractive counterfactual thinking (e.g., I should not have purchased that car) does not affect how gain or loss frames are received. The difference in these framing effects can be attributed to other factors such as involvement (i.e., personal relevance to the message topic) – a critical independent variable in ELM that affects how messages are processed (Baek et al., 2013). Put differently, the effects of these health messages may be determined by factors associated with the experiences, abilities, and dispositions of those who encounter them. Therefore, examining the importance of cognitive mechanisms in persuasion literature may offer novel insight to this line of research.

While earlier scholarship promoted the efficacy of fear appeals in reducing binge

drinking (Wolburg, 2001), Jessop and Wade (2008) found that utilizing fear appeals increased individuals' willingness to engage in binge drinking. This could be due to the fact that binge drinking is highly associated with perceived group norms and self-esteem (Chauvin, 2011); put differently, those who value this behavior as normative to a salient social group (e.g., fraternity) will disregard such appeals. Similarly, past literature suggests that people are motivated to stop binge drinking only if they believe its consequences are relevant to them (Wolburg, 2001). However, more recent studies provide evidence that overt attempts at persuasion may result in an opposite effect (i.e., an embrace of binge drinking) (Jessop & Wade, 2008; Lee & Bichard, 2006). As noted in the earlier section of this thesis, signs of persuasion may affect how individuals process these messages, which will apparently result in boomerang effect (Fishbein et al., 2002).

With research demonstrating mixed evidence, a different approach is warranted. The focus of these efforts should move to how individuals engage with messages directed at discouraging binge drinking. Cognitive variables, such as motivation (e.g., involvement), need to be included in analyses (Baek et al., 2013), since these variables lead to attitude and behavioral change. Within this context, ELM can accomplish these aims and serve as a novel theoretical framework. To the best of my knowledge, ELM was never utilized in the context of binge drinking. While the model was used by Glassman et al. (2018) to address *drunkorexia*, the messages designed were conceptually different to what anti-binge drinking messages tend to promote.

Perhaps one approach to influence individuals can be via utilizing celebrities or, given the relevance of binge drinking within sports, athletes. The aforementioned studies

that considered binge drinking did not utilize celebrities as a potential source of influence. However, celebrities can be a great source of influence in matters such as purchase intentions, financial donations, and health-related behaviors (Bush et al., 2004; Hoffman & Tan, 2015; Kim & Walker, 2013). Among celebrities, athletes can be an effective tool in promoting health behaviors, as they attract media coverage and can influence the public agenda (Bae et al., 2010). To date, three studies have highlighted the relevance and influence of athletes in these efforts. First, media coverage of athletes' own experiences with health-related issues can be a powerful medium of shaping health perceptions. Brown and de Matviuk (2010) found that the media coverage of Diego Maradona's (i.e., a soccer legend from Argentina) history of drug use has increased awareness about and encouraged Argentinian youth to abstain from using drugs. Second, athletes' use of social media and direct communication with fans can humanize stigmatized issues. Livingston et al. (2013) found that prominent sports figures on social media can increase awareness of mental health issues through their posts. Third, athletes participate in frequent press conferences, which offer opportunities to engage multiple stakeholders in a dialogue. Brown and Basil (1995) underscore the importance of Magic Johnson's announcement of his diagnosis for bringing awareness to high-risk behaviors associated with contracting HIV/AIDS. Together, these studies suggest that the public's consumption of sports media and admiration for athletes provides them with the ability to advocate for public health. Building upon these efforts, athletes may be effective sources of information and awareness about binge drinking.

Rationale

As aforementioned, knowledge of health issues does not always materialize toward adopting desirable behaviors (Petraglia, 2009). Early health campaigns that were developed on the theoretical concepts, such as the theory of reasoned action, social cognitive theory, and health belief model, have seen little tangible effect on public health (Yanovitzky & Stryker, 2001). Kim et al. (2012), therefore, called for further studies that examine cognitive processing of the individuals, which is a fundamental concept of ELM (Petty & Cacioppo, 1986). ELM's ability to determine how health messages are processed, and what variables induce attitude and behavioral change, thereby providing us a clear framework for developing future health campaigns. Using this framework, this thesis seeks to understand the role of athletes as health advocates and considers how audiences may cognitively evaluate their arguments and social understandings of race in the processing of their efforts.

Traditionally, the ELM has posited that motivation to consume a message (i.e., assessed via involvement; Petty and Cacioppo, 1979) and the ability to process a message (i.e., assessed via prior knowledge; Cyr et al., 2018) dictates which route of processing is adopted (i.e., assessed via elaboration; Petty & Cacioppo, 1981). Specifically, both motivation *and* ability are required to engage in central route processing. Therefore, both concepts must be considered when predicting audiences' use of central or peripheral routes – a limitation of past research. For instance, recent research that applies ELM often focuses on either motivation or ability singularly as determinants of central or peripheral route processing (e.g., Oh & Jasper, 2006; Zhou et al., 2016). This is consequential as the

seminal theorizing forwards that individuals need both motivation and ability (Petty & Cacioppo, 1986). As such, a singular focus provides a less efficient and full understanding of message processing. Hence, studies employing such a research model tend to not accurately represent the mechanisms forwarded by the ELM. It should be noted that the current media ecosystem is enabling information overload (Swar et al., 2017); thus, encouraging people to rely on heuristics to process messages quickly (Baran & Davis, 2015). These contemporary environmental factors may affect individuals' motivation or ability to process media messages. Therefore, consistent with the traditional ELM postulates, the following hypothesis is forwarded:

H1: Involvement and prior knowledge of binge drinking behaviors will positively predict participants' elaboration, such that high involvement and high prior knowledge will lead to more elaboration.

The outcomes associated with ELM address attitudes and (to a lesser extent) behaviors encountered within persuasive messages. ELM forwards that attitudes mediate the relationship between elaboration and behaviors (Petty & Cacioppo, 1986). Put differently, elaboration indirectly aids health behaviors to the extent that it alters one's attitudes. This indirect relationship is known as attitude-behavior correspondence and is one of the most important discussions in persuasion literature (Petty & Cacioppo, 1986). Specifically, ELM asserts that attitudes formed via central route are most predictive of behaviors, and attitudes formed via peripheral route are less predictive of behaviors (Petty & Cacioppo, 1984). Within this thesis, we are attempting to understand the efficacy of stimuli featuring athletes' health advocacy for changing respondents' attitudes

toward binge drinking (i.e., a general evaluation of binge drinking) and the effect of these attitudes on the intentions to stop/avoid in binge drinking. Despite the theorizing about attitude-behavior correspondence, few studies using ELM have analyzed if attitudes actually predict behaviors (Conner & Norman, 2020); As aforementioned, recent ELM studies have overlooked several basic tenets of the theory. Therefore, to bring clarity toward the understanding of attitude-behavior correspondence, the following hypotheses are advanced:

H2: Elaboration will positively predict participants' unfavorable attitudes toward binge drinking.

H3: Elaboration will positively predict participants' behavioral intention to stop/avoid binge drinking.

H4: Participants' unfavorable attitudes toward binge drinking will mediate the relationship between elaboration and intentions to stop/avoid binge drinking.

As mentioned earlier, individuals engaged in the central route or the individuals engaged in peripheral route do not process the information using the same variables. For example, individuals processing the information via central route (i.e., high elaboration) utilize issue-relevant arguments, while individuals processing the information via peripheral route (i.e., low elaboration) utilize simple cues (e.g., source attractiveness, number of arguments, etc.) (Petty & Cacioppo, 1986). Therefore, for people who are highly motivated and have the ability to process the advocated issue, argument quality is a more important determinant of persuasion. On the other hand, for people who are not highly motivated or possess the ability to analyze the advocated issue, argument quality is

a less important determinant of persuasion. The difference in the effect of argument quality manipulations should be substantially larger when individuals are processing centrally than peripherally (Carpenter, 2014). Therefore, to replicate the recent findings of argument quality effect only for individuals engaged in high elaboration (Cyr et al., 2018; Zhou et al., 2016) and to test these manipulations in the context of binge drinking, the following hypotheses are posted:

H5: The effect of elaboration on participants' unfavorable attitudes toward binge drinking will be moderated by argument strength condition, with larger effects being associated with those encountering strong argument conditions

Importance of athletes' race. As noted earlier, there has been a renaissance and diversification within athlete activism and advocacy over the past decade. While athletes are still part of political discourse, they also take public advocacy positions on issues, including those associated with health. Unfortunately, based on previous sports media research, audiences may not process athletes' attempts at advocacy equitably. Specifically, extant research has shown that African American athletes are evaluated in accordance with historical and inaccurate perceptions of reduced cognitive ability (Smith, 2009; Wininger & White, 2015). These belief structures have been attributed to historical classifications originating in the 19th century, which were rooted in debunked and deeply flawed "scientific" efforts of the time, including social Darwinism and colonialism (Hoberman, 1997). These structures created and reinforced social hierarchies of racial abilities, including an inaccurate notion that African American individuals possessed diminished cognitive abilities. Such belief structures fueled the expansion of European

imperialists worldwide (e.g., African Americans and South Asians) (Hall, 2001). Additionally, these beliefs became deeply embedded in American society during Antebellum and were used as justification for slavery and Jim Crowe (Hoberman, 1997). The legacy of these belief structures continues in modern times via colloquial assertions and biases, which manifest in racialized uses of the “dumb jock” stereotype or the historical use of the buck/brute (i.e., dominate physical specimens who lack reasoning abilities) or sambo (i.e., a docile and gentle imbecile) stereotypes (Tyree, 2011; Wininger & White, 2015).

These harmful, erroneous stereotypes about mental abilities have been widely documented in sports media. For instance, several framing studies over the course of the last two decades provided evidence for media images that use characteristics (e.g., words or pictures) that portray African American athletes to be mentally inferior to their Caucasian counterparts (Angelini & Billings, 2010; Cranmer et al., 2014; Cranmer et al., 2017; Foster & Chaplin, 2017). Lewis et al. (2019) found that African American athletes were shown as brawny (i.e., focusing on their physical attributes by undermining their intelligence), while Caucasian athletes were shown as brainy (i.e., depicting them as intelligent). Similarly, Dixon and Linz (2000) found that African Americans athletes were consistently shown as perpetrators of violence. Likewise, thought patterns that associate highly popular African American individuals with athletics and entertainment, inspire perceptions of diminished mental capabilities (Wade & Bielitz, 2005). It is humanely important to note that these perceptions are socially created and are not backed by empirical evidence. Therefore, the perception that African Americans are less

intelligent and insincere, due to their racial features, is fundamentally flawed.

As aforementioned, the perceptions of the public toward African American athletes are reserved to having more physical strength but less mental capacity (Hall, 2001), a false impression instigated by prejudiced media images. Extending this notion, scholars have argued that such pervasive irrationality limits the opportunities of African American athletes to take up leadership roles in sport and society at large (Smith, 2009). Extending these assertions to the contexts of advocacy and informational attempts at health persuasion, the aforementioned stereotypes would be threats to African American athletes' credibility and authority (Sanderson et al., 2016a). Specifically, race may serve as a heuristic cue that those with the aforementioned racial biases utilize to infer about the quality of health information, with information presented by African American athletes being perceived as more suspect. Although limited, recent media effects studies provided contrary evidence regarding racially motivated attitudes against African Americans (Ash & Cranmer, 2020; Brown et al., 2019; Cranmer et al., 2017), the historical and pervasive nature of racial bias informed the following hypothesis:

H6: African American athletes will be less likely to influence (a) unfavorable attitudes toward binge drinking; (b) behavioral intentions associated with stopping/avoiding binge drinking.

Continuing with the logic outlined in the previous hypothesis, Polletta and Redman (2020) suggest that audiences' preexisting beliefs, assumptions, and stereotypes toward a source of information may induce counter-arguments against the issue. Racialized counter-arguments may be triggered within audiences' perceptions of athlete

advocacy via two mechanisms. First, the common portrayals within sport media that diminish African American athletes' intelligence may fuel the public's belief that their advocacy positions are flawed because of the racial characteristics of the source. Second, other sources of bias or racism that may be independent of sport media portrayals may also encourage resistance to advocacy attempts from African American athletes. Smith (2009) argued that the public often views African American athletes as sporting entities alone – denying their social experiences, interests, and non-sporting realities. In this manner, it is possible that audiences of health advocacy might be less inclined to listen to and consider arguments and experiences of African American athletes. In contrast to the assertions of sport scholars, empirical research using ELM has demonstrated that participants cognitively process information, even in low-involvement conditions, when the message source is an African American individual (White & Harkins, 1994). Put differently, participants are more willing to consider arguments about less relevant topics from African Americans than Caucasians. This phenomenon is referred to as the “watchdog hypothesis”, which states that individuals are motivated to process information from or about African Americans (and other stigmatized groups) to prevent showing any prejudice (Johnson et al., 2017, p.1). Given the contradictory nature of these two competing theoretical and empirical assertions, the following research question is advanced:

RQ1: Will respondents counter-argue more with the African American athlete than with the Caucasian athlete?

Race within ELM. The role of source identity within ELM is complex and, at

times, contradictory. Source characteristics is one of the important variables that can influence the extent and direction of information processing (Whittler & Spira, 2002). These characteristics are suggested to influence the motivation and ability of receivers to process persuasive messages (Petty & Cacioppo, 1983). Among those characteristics, ELM recognizes that race is one such variable that can influence persuasion. However, the position of race within the ELM framework, like any other variable is contendable. As noted earlier, the multiple roles postulate of the ELM states that any variable possesses multiple roles, such that in one situation it acts as a peripheral cue, while in another, it may act as an issue-relevant argument (Petty & Cacioppo, 1986). Therefore, race may act as a message characteristic, peripheral cue (Whittler & Spira, 2002), or as an issue-relevant argument (e.g., when source's race matters in the discourse of racial disparity) (see, Dunbar et al., 2014). For instance, Griffith et al. (2018) concluded via metanalysis of 6 studies that input variables affect motivation and ability to process a message; although they did not specifically consider race as one such variable. On the other hand, Naseri and Tamam (2012) claimed that race functions as a peripheral cue that is utilized to evaluate messages in the absence of motivation and ability. While the majority of research supports the view that race primarily functions as a peripheral cue (Whittler & Spira, 2002), few have considered race as an input variable. The lack of specificity around the role of race within ELM inhibits understandings of the theory and persuasive messages may be understood. It is of practical consequence for practitioners whether a variable shapes motivation and ability to process a message, is utilized in their absence, or some combination of both scenarios, as this information may inform the

structure or strategies utilized within persuasive attempts. As such, to further explore the nature of race in ELM, we advance the following research question:

RQ2: Is race a determinant of motivation or ability (i.e., input variable), or a determinant of attitudes and behaviors (i.e., peripheral cue)?

CHAPTER TWO

METHODS

Sample

Participants were 293 undergraduates (116 male and 177 female) at a large southeastern university. Participants' age ranged from 18-to-25 years old ($M = 19.48$, $SD = 1.18$), were racially homogenous ($n = 250$ Caucasian, 85.3%), and mostly in their first two years of studies ($n = 103$ first-year students, 35.2%; and $n = 124$ second-year students, 42.3%). The majority of participants engaged in binge drinking ($n = 162$, 55.3%), but were not members of a fraternity or sorority ($n = 186$, 63.5%). See Table 1 for further details of the participants' demographics.

Procedures

Prior to initiating the thesis, the stimuli used in this experiment were pilot-tested to assess the argument quality manipulations but not for race manipulations. Two news articles – one strong argument and one weak argument – were pilot-tested with a student sample ($n = 17$), which was separate from the main study's participant pool. They were awarded a partial credit by their instructor who invited them to participate in this pilot-test. Additionally, the news articles were also tested with a sample recruited from Amazon Mturk ($n = 25$), where each participant was paid \$0.40 for their effort. Regardless of the recruitment procedure, all pilot-test participants were directed to a questionnaire hosted on *Qualtrics* and instructed to read the two news articles which were assigned in random order. After reading each article, pilot-test participants were asked to rate the stimuli on a sliding scale ranging from 1-100 for *persuasiveness* and

convincibility. At the conclusion of the pilot-test, participants were also asked to choose one of the two articles as *more persuasive* or *more convincing*. Two paired-samples *t*-tests demonstrated the stimuli differed significantly in regards to persuasiveness ($t(41) = -2.97, p < .01$) and convincibility ($t(41) = -4.34, p < .001$), with the strong argument condition (persuasiveness $M = 60.57, SD = 22.90$; convincibility $M = 63.31, SD = 23.19$) being deemed more persuasive and convincing than the weak argument condition (persuasiveness $M = 49.83, SD = 26.52$; convincibility $M = 47.93, SD = 27.64$). Additionally, for the forced-choice question, 78.6% of participants ($n = 33$) selected the strong argument condition as more persuasive and convincing. Based upon these results, the argument conditions within the stimuli were finalized.

Following approval from the institutional review board (IRB), participants who were at least 18 years of age or older were sought for a study seeking *to understand perceptions regarding news articles*. Participants were recruited via convenience sampling, using a department's research participant pool at the researchers' university, which meant all individuals in the population did not have an equal chance of being represented in our sample (Miller & Brewer, 2003). Data collection occurred between February and March 2021. Those interested in participating were directed to an online questionnaire featured on Qualtrics. Prior to beginning the questionnaire, participants were informed about the purpose of this thesis via an IRB-approved consent letter (See Appendix A for consent letter). Participants indicated their consent by choosing "I agree", and only those who provided consent were forwarded to the questionnaire. Those who did not consent or failed to meet the eligibility criteria were routed to the end of the

questionnaire and thanked for their time. Participants, then, reported on binge drinking behaviors (i.e., “*how often do you engage in binge drinking?*”), within a set of five foil questions. After, all participants were again randomly assigned within a 2x2 factorial design assessing race (Caucasian/African American) and argument strength (strong argument/weak argument). This thesis utilized a stimulus sample (Wells & Windschitl, 1999), which reduces the confounding effect of specific characteristics of a stimuli (e.g., the effects of athletes’ position [e.g., running back and wide receiver]) on the dependent variables. Thus, to control for the individual differences of the athletes we diversified the narrative source to one of 10 athletes across five positions – for a total of 20 news article conditions. See Appendix B-D for examples of the stimuli and Table 2 for the distribution of participants across these conditions.

After exposure to the news article, participants were forwarded to the questionnaire measuring the core variables of ELM and additional demographic characteristics (See Appendix E for the questionnaire). At the end of the questionnaire, participants were debriefed about the exact purpose of the study and that the provided stimuli were fictional, thanked for their participation and awarded credit. See Appendix F for debrief form.

Materials/Stimuli

As aforementioned, this thesis manipulated race and argument quality. However, since athletes are being used as sources of information in the news articles, there is a possibility for a confounding effect of athletes’ position (e.g., running back, wide receiver, etc.) on the dependent variables. Therefore, stimulus sampling is employed

(Wells & Windschitl, 1999). This is to control for the individual differences of the athletes beyond the variables that are of interest to this study. For this purpose, five different positions were chosen. Each position is represented by one Caucasian athlete and one African American athlete. The athletes used for the purpose of this study were: running backs (Will Shipley for Caucasian; Phil Mafah for African American), wide receivers (Brannon Spector for Caucasian; Frank Ladson Jr. for African American), offensive linemen (Will Putnam for Caucasian; Jordan McFadden for African American), linebackers (Jake Venables for Caucasian; Mike Jones Jr. for African American), and defensive ends (Bryan Bresee for Caucasian; Myles Murphy for African American). This decision was made in an effort to increase the external validity of the study, as it ensured the athletes depicted were known by participants and were real public figures. Moreover, the selection of these athletes in conjunction with a Clemson student sample increases the relevance and likely effects of the study's materials. Simply, our sample will know who these athletes are and will most likely be favorable toward them. Again, this offers a degree of external validity as sport fan populations are more likely to encounter the advocacy of athletes who they follow and enjoy. There are potential limitations that accompany this decision for which will need to be controlled. First, when utilizing real athletes in experimental conditions, scholars must assess levels of fandom and affective attachments to those athletes (e.g., parasocial interaction) (Rubin & Perse, 1987). The reason for these needs is that audiences may respond based on a relational or emotional connection that transcends the athlete's sporting role or normative fandom. Second, given these athletes are also students, it is possible that participants may be student-athletes

(i.e., including the depicted athletes themselves) or have actual interpersonal relationships with these athletes, which could inform their responses. Third, the focus on football student-athletes at Clemson University may confound the findings of the study, as football is the most popular sport at the university and is noted for its loyal and rabid fanbase. As such it is imperative to account for such variables, which may render the effects of the manipulations moot, as reactions may be based on shared identities as Clemson Tigers or interpersonal connections, as opposed to race and argument quality. Such a threat, however, mirrors potential patterns in the treatment of African American athletes in society at large (i.e., the racial contradiction) (Brown et al., 2019). Moreover, each athlete was contacted and provided an opportunity to show objection toward the use of their names, but none opposed.

To manipulate race, the athletes' pictures were utilized. No other references were made in the news article that can direct participants' attention toward the athlete's race. The pictures were acquired from the University's athletics website, thus, all of them looked identical (i.e., apparel, background, etc). With the exception of Will Putnam, all athletes were smiling. Argument quality is manipulated using statistical information for strong arguments and personal examples for weak arguments. For instance, the strong argument condition attributed the effects of binge drinking on academic performance as *"increases the likelihood of missing a class by 9% and lagging in schoolwork by 5.4%"*. In contrast, the weak argument condition mentions the same effect as *"some of my friends who binge drink regularly miss class and lag in their school work. Most of them have GPAs below 3.0"*. The word count for strong argument condition (376) is slightly higher

than weak argument condition (364 words). Flesch-Kincaid scores across the two argument conditions were 13.3 for the strong and 9.6 for the weak condition. A slightly higher score on the strong argument condition is caused by the use of statistical and technical information.

Measures

The questionnaire consisted of measures that evaluated participants' attitude and behavioral responses toward binge drinking, aspects of the ELM (i.e., involvement, prior knowledge, elaboration, attitudes, behaviors, and counter-arguments), and demographics. See Table 3 for a complete list of measurement descriptive statistics.

Participants' *involvement* with binge drinking was operationalized as an event that has personal relevance to the reader (Petty & Cacioppo, 1979). This variable was assessed using a revised version of Reynolds (1997) 7-point semantic differential scale containing five bi-polar adjectives (e.g., *relevant to me - irrelevant to me*, *applicable to me - not applicable to me*).

Participants' *prior knowledge* of binge drinking was operationalized as the amount of knowledge an individual has before reading the stimuli (Britton & Tesser, 1982). This variable is assessed using a novel measure that was inspired by Cyr et al. (2018) prior knowledge scale. This measure contained 6-items that determined knowledge of binge drinking prior to encountering the stimuli (e.g., "*prior to reading this news article, how knowledgeable were you regarding the effects of binge drinking on human health*"). Responses were recorded on a 7-point Likert-type scale that ranges from *novice* (1) to *expert* (7) and *never* (1) to *often* (7).

Participants' *elaboration* was operationalized as the cognitive effort participants invested in processing the stimuli. This variable was assessed using a revised version of Reynolds' (1997) 11-item elaboration measure. Participants responded to the stem *While reading the message I was ...* and indicated their degree of cognitive effort (e.g., *attentive to the ideas being discussed*). The measure was revised to avoid negatively worded items. Responses were recorded using a 7-point Likert-type scale that ranged from *strongly disagree* (1) to *strongly agree* (7).

Participants' *attitudes* were operationalized as "the general evaluations people hold in regard to themselves, other people, objects, and issues" (Petty & Cacioppo, 1986, p. 4). This variable was assessed using Fishbein and Raven (1962) 7-point semantic differential scale containing five items that captured participants' attitudes toward binge drinking (e.g., *good-bad, harmful-beneficial*).

Participants' *counter-arguments* were operationalized as thoughts that are inconsistent with the efforts of persuasive communication (Petty & Cacioppo, 1986). The variable was assessed using a Reynolds (1997) 5-item counter-argument measure, which seeks to determine the efforts participants put forth to resist or counter the arguments within the stimuli (e.g., *actively resisting the reasoning in the message*). Responses were recorded on a 7-point Likert-type scale that ranges from *strongly disagree* (1) to *strongly agree* (7).

Participants' *behavioral intention* was operationalized as an individuals' motivation to perform a certain behavior (Ajzen, 1985). The variable was assessed using a revised version of Swar et al. (2017) 3-item behavioral intention measure, which

identifies the intention of participants to cease or avoid binge drinking (e.g., *I intend to stop binge drinking in the near future*). Responses were recorded using a 7-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5).

Covariates. Participants' *history of binge drinking* was assessed with a single question (i.e., *how often do you consume 4/5 drinks in a single occasion?*). The response options were: *daily, multiple times per week but not daily, once per week, once per few weeks, once per semester, or never*. This variable was dummy coded as 0/1 to allow for their use in regression analyses, with those who met the criteria of binge drinkers coded as 1 and those who did not coded as 0. In an effort to hide the intention of the study and not prime participants, this question was obtained prior to interacting with stimuli and was embedded within a list of six foil questions (e.g., *on average, how many hours do you spend sleeping per night*).

Participants' *parasocial interaction* with the depicted athletes was operationalized as "a sense of affective interpersonal involvement with media personalities" (Rubin & Perse, 1987, p. 254). The variable was assessed using a revised version of Pan and Zeng (2017) 7-item parasocial interaction scale, which will identify the participants' perceived closeness with the athlete (e.g., *If there were a story about [featured athlete's name] in a newspaper or a magazine, I would read it*). Responses were recorded using a 7-point Likert-type scale ranging from *strongly disagree* (1) to *strongly agree* (7).

Participants' *Clemson fandom* was operationalized as, "...a positive, personal, relatively deep, emotional connection with a mediated element of popular culture" (Duffett, 2013, p. 3). The variable was assessed using a revised version of Wann (2002)

Sport Fandom Scale, which was altered to reflect the team and sport of interest in this study. This 5-item measure sought to measure an individual's involvement and intimacy to Clemson football (e.g., *I consider myself to be a Clemson football fan*). Responses were recorded using a 7-point Likert-type scale ranging from *strongly disagree* (1) to *strongly agree* (7).

Membership in a sorority or fraternity (i.e., *yes/no*) was an additional covariate that was considered because it is associated with the performance of binge drinking behaviors -- and thus may alter how participants respond to stimuli (e.g., motivated reasoning).

Demographics. A variety of *demographics* were obtained, including participants' age, sex (i.e., male/female), ethnicity (e.g., *Caucasian*), major, and year in school (e.g., *first-year*).

Attention Checks. Attention check items were utilized in multiple parts of the questionnaire. Such items directly solicited participants to provide prescribed responses to a question (e.g., *please answer neither to this question*). These items ensured participant attention and effort, without relying on negatively worded items that introduce error into the measurement model. In total, two attention checks were embedded within the measures featured in the questionnaire.

Manipulation Check. To determine if the manipulation of the athlete race was successful, a manipulation check was conducted. For *athlete race*, participants were asked a single question within the demographic section inquiring about the race of the athlete in the article they read (i.e., African American or Caucasian).

Data Analysis

After data collection and prior to examining the hypotheses, data was downloaded from Qualtrics into an SPSS file. As part of cleaning the data, identifiable information (e.g., IP addresses, longitude/latitude) were removed. Additionally, participants who did not complete the questionnaire in its entirety were excluded prior to analyses ($n = 5$). Finally, attention and manipulation checks were enforced. For attention checks, any participant who did not respond with the prescribed answer were discarded from the data set ($n = 9$). For the race manipulation check, any participant who responded with an incorrect race for the athlete assigned to them (i.e., African American or Caucasian) was removed from the data set ($n = 6$). Moreover, since the commonly accepted definition of binge drinking does not address non-binary individuals, one additional respondent was excluded from the analyses. In total, the analyzed data consisted of 293 respondents.

Hypothesis one (i.e., that elaboration will be positively predicted by involvement and prior knowledge) was assessed using a hierarchical multiple regression. Covariates of Clemson football fandom, parasocial relationships with the depicted athletes, history of binge drinking (i.e., yes [1] and no [0]), and fraternity/sorority membership (i.e., yes [1] and no [0]), were included in the first block of the analysis. Including these variables here allowed for the assessment of variance within elaboration that can be explained by these contextual factors. Moreover, this structure controls for these variables, allowing for the identification of additional variance (i.e., ΔR^2) and significance (i.e., ΔF) of adding the mechanisms of elaboration as outlined within ELM. The second block consisted of involvement and prior knowledge. The third block featured the interaction between

involvement and prior knowledge. Prior to running the regression, assumptions related to autocorrelation (*Durbin-Watson* value = 2.09) and multicollinearity (*Tolerance* = .64 to .96, *VIF* = 1.04 to 1.57) were assessed and results indicated the assumptions were not violated.

Hypotheses two (i.e., elaboration will positively predict unfavorable attitudes toward binge drinking), three (i.e., elaboration will positively predict behavioral intention to stop/avoid binge drinking), and four (i.e., unfavorable attitudes toward binge drinking will mediate the relationship between elaboration and intentions to stop/avoid binge drinking) were tested with a simple mediation model (i.e., Model 4) in PROCESS (Hayes, 2013). Within this model, elaboration served as the independent variable (x), behavioral intention as the dependent variable (y), and unfavorable attitudes as the mediator (M). The model employed 5,000 bootstrapped samples and bias-corrected confidence intervals set to 95% to test the indirect effect. The direct effect of X on M was utilized to test hypothesis two. The direct effect of X on Y was utilized to test hypothesis three. The indirect effect of X on Y was utilized to test hypothesis four.

Hypothesis five (i.e., argument strength will moderate the effect of elaboration on unfavorable attitudes, with larger effects being associated with those encountering strong argument conditions) was tested through a simple moderation model (i.e., Model 1) in PROCESS (Hayes, 2013). Within the model, elaboration was treated as the independent variable (x), argument condition (dummy coded as 1 strong argument, 0 weak argument) served as the moderator (w), and unfavorable attitudes toward binge drinking served as the dependent variable (y). The model employed 5,000 bootstrapped samples and bias-

corrected confidence intervals set to 95% to test the moderation effect.

Hypothesis six (i.e., African American athletes will be less likely to influence [a] unfavorable attitudes toward binge drinking; [b] behavioral intentions associated with stopping/avoiding binge drinking), research question one (i.e., respondents counter-argue more with African American athlete than with the Caucasian athlete), and research question two (i.e., Is race a determinant of motivation or ability [i.e., input variable], or a determinant of attitudes and behaviors [i.e., peripheral cue]) were tested using five, one-way ANOVAs. The four conditions within the 2x2 design were entered as the grouping variable, whereas attitudes about binge drinking, behavioral intention associated with binge drinking, counter-arguments, motivation, and ability, respectively.

CHAPTER THREE

RESULTS

The first hypothesis predicted that involvement and prior knowledge of binge drinking would predict participants' elaboration of athletes' advocacy on the issue. A hierarchical multiple regression revealed a significant overall model; $F(7,285) = 5.97, p < .001, R^2 = .13$. Within the first block of covariates ($F[4,288] = 8.92, p < .001, R^2 = .11$), parasocial relationships ($\beta = .24, t = 3.63, p < .001$) with the assigned athlete significantly predicted elaboration. However, neither the addition of involvement and prior knowledge within block two ($\Delta F[6,286] = 2.79, p = .06, \Delta R^2 = .02$) nor the interaction between them in block 3 ($\Delta F[7,285] = .20, p = .66, \Delta R^2 \sim .00$) significantly improved the model's prediction of elaboration. Thus, hypothesis one was not supported. See Table 4 for hierarchical regression analysis.

Hypotheses two (i.e., elaboration will positively predict unfavorable attitudes toward binge drinking), three (i.e., elaboration will positively predict behavioral intention to stop/avoid binge drinking), and four (i.e., unfavorable attitudes toward binge drinking will mediate the relationship between elaboration and intentions to stop/avoid binge drinking) were tested with a simple mediation model (i.e., Model 4) in PROCESS (Hayes, 2013). Within the model, elaboration was not associated with unfavorable attitudes, ($b = .05, SE = .06, CI\ 95\%: [-.07, .17]$); Hypothesis two was rejected. Direct effects were observed between elaboration and intentions to stop/avoid binge drinking, $b = .26, SE = .08, CI\ 95\%: [.10, .41]$; Hypothesis three was supported. Indirect effects of elaboration on intentions to stop/avoid binge drinking through unfavorable attitudes were

not observed, ($a_1b_1 = .04$, $SE = .05$, $CI\ 95\%: [-.05, .14]$); Hypothesis four was rejected.

See Table 5 for OLS Regression Coefficients and Indirect Effects.

Hypothesis five speculated that the effect of elaboration on participants' unfavorable attitudes toward binge drinking will be moderated by argument strength condition, with larger effects being associated with those encountering strong argument conditions. Results of the analysis demonstrated an insignificant model, $F(3,290) = 1.15$, $p = .33$ $R^2 = .01$. Moreover, the interaction term was non-significant, $b = .17 (.13)$, $t = -1.37$, $CI\ 95\% [-.42, .08]$. Thus, hypothesis five was not supported.

Hypothesis six predicted that African American athletes will be less likely to influence (a) unfavorable attitudes toward binge drinking; and (b) behavioral intentions associated with stopping/avoiding binge drinking. Two one-way ANOVAs indicated no significant differences for unfavorable attitudes ($F(3,290) = .25$, $p = .86$) and intention to stop/avoid binge drinking ($F(3,290) = .24$, $p = .87$) across the four experimental conditions.

Research question one sought to determine if participants counter-argued more with the African American athlete than the Caucasian athlete. A one-way ANOVA revealed a significant differences in counter-arguments across the four experimental conditions ($F(3,290) = 3.74$, $p < .05$, $\eta^2 = .04$). Post-hoc bonferroni comparisons revealed that the combination of the African American athlete and strong argument condition ($M = 2.32$, $SD = 1.15$) yielded less counter-arguing than the African American athlete and weak argument condition ($M = 2.96$, $SD = 1.37$). No other differences emerged between conditions. In summary, Black and White athletes were counter argued to similar extents

– even though the Black athlete and weak argument condition was significantly counter argued more than the Black athlete and strong argument.

Research question two sought to determine the role of race either as an input variable or as a peripheral cue. A series of one-way ANOVAs for involvement ($F(3,290) = 1.44, p = .23$), prior knowledge ($F(3,290) = .85, p = .47$), unfavorable attitudes ($F(3,290) = .25, p = .86$), and intentions to stop/avoid binge drinking ($F(3,290) = .24, p = .87$). Thus, race was not evidenced as either an input variable or as a peripheral cue.

CHAPTER FOUR

DISCUSSION

The general purpose of this thesis was to answer the call to explore the efficacy of using athletes as public health advocates (Brown & de Matviuk, 2010; Leng & Phua, 2020). Although previous scholarship has consisted of content analyses of athletes' experiences with health issues (Parrott et al., 2021; Lavelle, 2020), survey research associating sport media consumption with health knowledge (Brown & de Matviuk, 2010), and examined the role of the sources of health messages (e.g., doctors and celebrities), the potential influence of athletes as health advocates has been relatively overlooked, with few exceptions. For instance, Behnoosh et al. (2017) found that athletes are more credible and convincing than an average celebrity in promoting physical activity. Instead, most scholars have considered the influence athletes exert on consumers' purchase intentions (Dix et al., 2010) and the effectiveness of advertising (Bush et al., 2004). This dearth of knowledge is problematic as athletes are becoming increasingly involved and outspoken about health-related attitudes and behaviors (Lavelle, 2020; Parrott et al., 2021; Wright, 2018). Findings from this thesis yield insights into how health-related messaging from athletes about binge drinking are processed, the benefits of using athletes in health persuasion, and the role of race in this process.

With regards to hypothesis one (i.e., involvement and prior knowledge would positively predict participants' elaboration), the addition of involvement and prior knowledge of binge drinking to the regression model did not improve the understanding of participants' elaboration, neither did their interaction did. These findings contradict the

theorizing of ELM (Petty and Cacioppo, 1986). Perhaps, the operationalization of ability with perceptions of prior knowledge may lack validity. Simply, perceived knowledge and actual knowledge are not necessarily the same concept. Participants may have perceived that they possessed adequate knowledge of the effects surrounding binge drinking, while their actual knowledge of the issue remained superficial. In particular, while participants might acknowledge this behavior to be detrimental – like many other unhealthy behaviors (e.g., smoking, or poor nutrition) – they may not have an accurate or nuanced understanding of it. For instance, Wacholz et al. (2014) found that while people believed climate change to be highly threatening, they lacked many basic understandings of the issue, including the ability to distinguish between climate and weather. Thus, while it remains possible that the participants believed binge drinking to be detrimental without understanding specific effects, causes, or contributing factors, they did not elaborate on the arguments for this very same reason.

Interestingly, the covariate of parasocial interaction was found as the only significant predictor of elaboration (11%). In other words, as the affective involvement with athletes increased, participants were more likely to reflect upon the binge drinking arguments featured within stimuli. Together, with the insignificant findings of hypothesis one, this evidence suggests that participants' involvement with athletes – not the issue of binge drinking – determines their willingness to reflect on health messages. This finding validates the assertions of several content analyses that suggested athletes may influence the publics' consideration and interest about health-related issues (Avilez et al., 2017; Brown & Basil, 1995; Brown & De Matviuk, 2010). This observed effect of parasocial

interaction is also consistent with prior literature in consumer studies, which show that individuals were more likely to demonstrate interest in brands and products that their favorite celebrities endorse (Bush et al., 2004; Dix et al., 2010). This finding is promising for health communication research in such that it indicates affective involvement with the source can encourage elaboration even if they might not engage in the behavior. This can be beneficial for health campaigns that are designed to prevent individuals from initiating a certain behavior. From the perspective of ELM, scholars may want to reframe personal involvement (i.e., a motivation variable) so that it is not limited to the individuals' proximity to the issue being discussed, but also with the source of the message.

Hypothesis two (i.e., elaboration would influence participants' unfavorable attitudes toward binge drinking) was not supported, which contradicted a fundamental theoretical assertion of ELM (Petty and Cacioppo, 1986). Therefore, in the context of this thesis, participants' attitudes toward binge drinking remained the same regardless of elaboration. This lack of relationship could be attributed to the fact that participants believed they were already aware of the consequences of binge drinking, meaning that their unfavorable attitudes about the behavior were well-established, as evidenced in the observed mean of 6.13 on a 7-point response format for that variable. Even beyond binge drinking, the population is largely cognizant of the repercussions of certain anti-health behaviors like smoking, driving under influence, or unprotected sex to the extent that elaboration would offer little change in these attitudes. While it is encouraging that people acknowledge the detrimental effects of binge drinking, it suggests that informative health campaigns might consider alternate means, which extend beyond attitude change,

to influence this behavior.

Hypothesis three (i.e., elaboration would positively predict participants' intentions to stop/prevent binge drinking) was supported. Put differently, participants expressed a greater intention to avoid binge drinking when they critically engaged with health-related messages provided by athletes. Engagement with stimuli via considering reasoning and rationalizing arguments embolden individuals to act, as they feel justified and assured of their intentions (Miller et al., 2018). Although seminal scholarship within ELM did not consider behavioral intention (Petty & Cacioppo, 1986), this finding is consistent with ELM's theorizing that elaboration can predict behaviors (Petty & Cacioppo, 1986). Since behavioral intention is a strong predictor of behavior (Ajzen, 1985; Ajzen & Fishbein, 1972), and behavior is methodologically difficult to measure, it would be safe to assume that elaboration can influence behaviors through intention. In conclusion, while previous ELM research terminates by assessing attitudes (e.g., Cyr et al., 2018; Oh & Jasper, 2006, Turner et al., 2019), this thesis also tests ELM and behavioral intention in the context of binge drinking. The addition of behavioral intention is a significant theoretical contribution.

Hypothesis four (i.e., that unfavorable attitudes will mediate the effect of elaboration on intention to stop/prevent binge drinking) was not supported. Thus, while elaboration predicted intentions (H3), the effect was not indirect through attitudes. Such a finding is not surprising given the lack of support for hypothesis two. Simply, a variable cannot mediate a relationship in a simple mediation model if it is not significantly associated with the independent variable (Baron & Kenny, 1986). See the aforementioned

discussion of hypothesis two for explanations for this lack of significant relationship. In addition, attitudes were found to have a direct effect on intention, with those who held unfavorable attitudes toward binge drinking intending to stop/prevent binge drinking in the future. Although the relationship between attitude and behavioral intention can be context-dependent (e.g., Lam and Hsu, 2006), this finding is consistent with Bhattacharjee and Sanford's (2006) study on how attitudes toward new information technologies can directly influence intentions to adopt them. Similarly, Choi and Park (2020) argued that attitude is the strongest predictor of behavioral intention.

Hypothesis five (i.e., the effect of elaboration on participants' unfavorable attitudes toward binge drinking will be moderated by argument strength condition) found no evidence of moderation. Additionally, neither elaboration nor argument condition were found to predict unfavorable attitudes. There are two potential explanations for this finding. First, given the solidified attitudes toward binge drinking there was not much variance that can be explained by either variables (i.e., elaboration or argument strength). Please see the aforementioned discussion of hypothesis two for an explanation of the lack of relationship between elaboration and unfavorable attitudes toward binge drinking. Second, additional factors not included within this thesis may determine unfavorable attitudes toward binge drinking. For instance, this can be explained through the framework of TPB and the health belief model. While TPB predicts that attitudes toward a behavior are influenced by beliefs about that behavior (Ajzen, 1985), the health belief model (HBM) provides a deeper insight into the mechanisms that affect these beliefs (Rosenstock, 1974). HBM asserts that health beliefs are affected by several components,

including, but not limited to, *perceived vulnerability* (i.e., how likely it is for someone to be negatively affected by the behavior). Therefore, rather than elaboration informing their unfavorable attitudes, perhaps their beliefs about perceived vulnerability had influenced their attitudes toward binge drinking. Empirical support for this assumption is derived from Ross et al. (2010) who found that perceived vulnerability to be a significant predictor of undergraduate students' attitudes toward wearing helmet while riding a bicycle. Therefore, regardless of the argument strength and the elaboration that participants have invested, their attitudes toward binge drinking may not have been influenced through these variables, since their beliefs about the behavior in question explains more variance in their attitudes.

Hypothesis six (i.e., African American athletes would be less likely to influence unfavorable attitudes and behavioral intentions associated with binge drinking) found no significant difference found between the African American or the Caucasian athlete conditions regarding their influence on unfavorable attitudes and behavioral intentions towards binge drinking. Simply, athletes' influence as health advocates does not appear to vary as a function of their race. This finding contradicts historical research that asserts African American athletes to be less credible and less authoritative in non-sport-related matters (Smith, 2009). Similarly, the claim that disparate media patterns which have been shown to exert negative effects on the credibility of African Americans (Angelini & Billings, 2010; Foster & Chaplin, 2017) cannot be supported through this thesis. However, the lack of significant effects attributable to race is consistent with more recent experimental research (Ash & Cranmer, 2020; Atwell Seate et al., 2010; Brown et al.,

2019; Cranmer et al., 2017). There are multiple potential explanations for this finding. First, the mechanism of disparate coverage has notably been shifting away from harmful stereotypes over the past two decades in a manner that portrays African Americans more favorably. For example, Dixon and Williams (2014) found that African Americans are increasingly being under-represented as violent perpetrators. Similarly, Tukachinsky et al. (2015) observed a changing pattern in their representations to “good and likable” (p. 32). Similarly, in sports media, patterns have shifted to more favorable portrayals of African American athletes, including “providing more equitable coverage” (Cranmer et al., 2016, p. 210), and using media scripts for African Americans that are traditionally reserved for Caucasian athletes (Mocarski & Billings, 2014). Two, an additional explanation could be that the use of a student sample altered the findings, as Atwell Seate et al. (2010) noted, students have increased racial sensitivity due to educational campaigns and racially-motivated efforts on college campuses.

With regards to research question one (i.e., participants would counter-argue significantly more with African American athletes than with Caucasian athletes), findings indicated no differences in counter arguing across athlete race. Simply, counter arguing occurred at similar rates between African American and Caucasian conditions. In other words, race was not a factor that induced more or less counter-arguments. However, a significant difference between the African American strong and African American weak conditions was observed. Even though both these conditions did not differ from either Caucasian conditions, a significant difference was observed in the ways participants counter-argued when they received an African American athlete. So, while a Caucasian

athlete was counter-argued similarly regardless of his arguments presented, the African American athlete was counter-argued less under strong argument conditions and more under weak argument conditions.

On the surface this effect is complex. One may be tempted to explain the positive response to the strong argument condition with claims of positive stereotyping, the racial contradiction, or even the soft bigotry of low expectations. For example, Ash and Cranmer (2020) found participants rated essays written by an African American athlete more positively than essays written by a Caucasian athlete, which they argued could be due to placing lower expectations for African Americans. Moreover, Brown et al. (2019) found similar patterns where an African American athlete was perceived more positively than a Caucasian athlete even though both athletes provided the same response to a criminal allegation. Perhaps, as Bodenhausen et al. (1995) explains, after being constantly exposed to positive exemplars of African American athletes through mass media (i.e., as successful), evaluations of African Americans athletes may have been placed under a more positive state. However, this set of arguments is incomplete and would fail to explain the increase in counter-arguments faced by the African American athlete in the weak argument condition.

A second line of argumentation that may be tempting is that under the weak argument condition audiences' preexisting and detrimental beliefs and attitudes toward a source may have induced counter-arguments (Polletta & Redman, 2020). Therefore, after seeing a flaw in the arguments, participants used the athlete's race as an element to validate the arguments. Thus, when they received an African American source, their prior

biases may have been activated, which advanced their intentions to counter-argue. However, this argument contrasts the results from Armstrong (2000). He found that under weak argument conditions, the African American source functioned as a positive cue; although the majority of his sample identified as African Americans. Given the current sample was principally Caucasian, perhaps the race of the African American athlete acted as a peripheral cue that triggered bias – reflected in greater counter arguing. Again, however, this argument reliant on racial bias is flawed and would fail to explain the positive response to the African American athlete's strong condition.

The best explanation for this observed finding is the watchdog hypothesis, which asserts that when information is presented from a minority source, it is processed more carefully than when presented from a non-minority source (Fleming et al., 2005; Johnson et al., 2017; Petty et al., 1999). Therefore, regardless of the argument condition, participants construed the message more critically when delivered by an African American athlete than a Caucasian athlete. This process exacerbated the influence of argument strength in a manner that made the strong argument more effective and the weak argument less effective. Perhaps, this can also be seen from an explicit-implicit bias perspective (Johnson et al., 2017). Put differently, under strong argument conditions, participants may have felt the need to intentionally suppress their beliefs about African Americans to be less credible, and, thus, made more positive evaluations. Under weak argument conditions, however, participants' implicit biases of African Americans may have been activated, resulting in more negative evaluations. These effects were seen in Hong and Len-Ríos' (2015) study that while participants evaluated an African American

spokesperson positively on explicit measures, at implicit level, stereotypes toward African Americans were placed more swiftly than for Caucasians.

With regards to research question two (i.e., which sought to understand if race was a determinant of motivation or ability, or a determinant of attitudes and behavior), findings indicated no significant differences. As mentioned earlier, there has been no consensus regarding the role of race either as an input variable or as a peripheral cue. While prior research positioned race in one of these components, results from this thesis show that race did not function either as a peripheral cue or as an input variable. This finding contrasts the study from White and Harkins (1994) where they found evidence that race was used to determine how information processing occurred (i.e., arguments were scrutinized even under low-involvement when presented by an African American source). While they attribute this finding to the theory of aversive racism (Dovidio & Gaertner, 2004), this thesis does not find any support for the theory in the context of ELM. In other words, neither did race increase motivation and/or ability to process the message, or functioned as a peripheral cue in the absence of motivation and/ability. This difference in findings can be perhaps due to two reasons. First, the context of the study may have functioned differently. While White and Harkins (1994) used a stimuli that is novel to their participants (i.e., a new exam policy), this thesis used binge drinking, where the attitudes toward this behavior are pre-existing. Thus, the participants in this thesis did not have the need to use race as a variable to develop their attitudes or show intentions toward stopping/avoiding binge drinking. Second, since college students are increasingly becoming racially sensitive (Atwell Seate et al., 2010), they did not

explicitly use race as an input variable (i.e., to see if it motivates or enables them to process the message). Thus, these findings together show that race may not possess a significant role in information processing, at least in the context of health messages.

Implications

Findings from this thesis have theoretical, heuristic, and practical implications. Theoretically, it is essential to note that ELM was seldom applied to health communication contexts. Although a limited number of studies (e.g., Jones et al., 2003; Turner et al., 2019) utilized this theoretical framework, it has yet to be adopted for binge drinking. Since it is critical to examine the audience's underlying cognitive structures in their health message processing, ELM provides valuable insights into the thought patterns that lead to attitude and behavioral change. Moreover, while the theory predicts that the interaction of motivation and ability variables influence elaboration, recent scholarship has failed to consider both. This thesis may provide some insight into why ability has been disregarded, as it not only found insignificant interaction between involvement and prior knowledge but also a lack of univariate effects on elaboration. Such a lack of relationship may have prompted earlier scholars to drop ability from subsequent analyses.

Additionally, this thesis also considered the relationships between elaboration, attitude, and intention. While Bhattacharjee and Sanford (2006) considered attitudes to influence intention, they did not consider elaboration. Similarly, Leong et al. (2017) analyzed the effect of involvement on intentions but did not analyze attitudes or elaboration. While Petty and Cacioppo (1986) claim for the theory to predict behaviors, the vast majority of ELM scholarship terminated with assessing attitudes. Therefore, this

thesis incorporates behavioral intention into the theoretical model, and explains its association with elaboration and attitudes. Specifically, elaboration predicted behavioral intention, but this effect did not go through attitudes. This knowledge is crucial to verify if the theory functions as forwarded in seminal works.

The results of hypothesis five bring insights into the role of argument strength in the context of health communication. This data supports the notion that providing two different versions of arguments against a behavior, which is already known to be detrimental, may not be effective or necessary. In other words, communicating evidence-backed statistical data or anecdotal information had elicited similar attitudinal change from the participants. Therefore, future ELM research may not have to consider argument strength while applying the theory within health communication.

Next, ELM has been extensively criticized for its multiple roles postulate (Mongeau & Stiff, 1993). Petty and Cacioppo (1986) state that a variable that acts as an issue-relevant argument under one condition can also function as a peripheral cue under a different condition. Therefore, there has been no consensus regarding the distinct roles that a variable might play in information processing. To add to this discussion, research question two sought to solidify the role of race in ELM as either an input variable or as a peripheral cue. Nevertheless, this thesis found no significant difference with race being utilized as an issue-relevant argument or as a peripheral cue. Unfortunately, definitive statements resulting from insignificant findings should be avoided. In other words, only within the context of this thesis can claims about race not functioning as an issue-relevant argument or as a peripheral cue be made.

Heuristically, this thesis offers evidence that athletes can potentially be used as health advocates. The parasocial interactions that these individuals maintain with fans, as opposed to other popular members of the society, enable media users to listen, comprehend, and engage with the information when presented by their favorite athlete. With this unique role in the society that athletes possess, their influence over health-related attitudes and behaviors is well documented in this thesis.

These findings also bring heuristic understandings into how individuals process information coming from a minority source. While no significant differences were found in how the participants received the news article from an African American athlete versus a Caucasian athlete, an effect of argument strength with African American conditions was found. Regardless of the argument condition, participants evaluated the news article from a Caucasian athlete equally. However, for the African American athlete, the weak argument condition was counter-argued significantly more than strong argument condition. These data offer support to the watchdog hypothesis that information from a minority source is processed more critically – a benefit for quality arguments and detriment for poor arguments.

Practically, these findings can be beneficial to health practitioners, public health institutions, and society as a whole. These findings furnish evidence for using athletes as health advocates, especially for issues that have been pervading the public health community. Therefore, health campaigns on a widespread level may use professional athletes who are popular across the country. While it is possible that no one athlete is equally adored by everyone in society, a nationwide survey can develop an understanding

of who this individual might be. Perhaps, one standard could be the followers count on social media. Likewise, exploring consumer behavior (e.g., jersey sales) can also bring preliminary insights into this phenomenon. For a more limited-scope health campaign (e.g., college-level), college athletes can be employed. It is practically easier at this level since college students have strong parasocial interaction with their own athletes.

Moreover, since binge drinking is rampant on college campuses, using college athletes seems to be a valid choice to influence the students' attitudes and behaviors toward it.

Limitations

While this thesis made some valuable contributions to the literature, it is not without limitations. Primarily, there are two concerns with the sample. First, the sample recruited for this thesis is skewed toward Caucasians (85%) as of result of the University's demographics. Thus, the sample representation has to be considered when making generalizations. For instance, one critical finding of this thesis is that participants counter-argued more with the African American athlete under weak argument conditions. Since individuals are more likely to process messages delivered by endorsers who are identical to them (Khatib, 1989), a majority African American sample may see an opposite effect. Second, the sample was recruited from one University from the southeastern region of the United States. Again, the results of this thesis must be taken with caution since the college population of the United States is largely diverse.

Next, there are also two concerns with the stimuli. First, the stimuli were designed to portray the athletes' efforts through a web-based news article. While college students are increasingly consuming news through digital media, other media may yield different

results. For instance, watching a video PSA or television campaign on anti-binge drinking may be processed distinctly by the participants. Second, since this thesis was not concerned with message framing, manipulation on this aspect was not employed. Other types of message characteristics (e.g., frames, narratives, fear appeals) may result in diverse findings. For instance, research has shown that narratives shrink counterarguments (Ma & Nan, 2018). Thus, the findings of this thesis may be constrained to traditional news articles. The limitations of these stimuli, in other words, restrict our ability to comprehensively understand the efficacy of athletes' advocacy.

Another limitation is that the programming of the survey ineffectively provided credibility measures to the participants. While this thesis attempted to do so, a technical error resulted in about 20% of the sample being expelled from one of the three credibility subscales (i.e., 10% did not receive the integrity subscale and 10% did not receive the benevolence subscale, respectively). These measures may have provided practical insights into the participants' evaluations of the athletes and inform us of to what extent these individuals place importance on credibility in the context of health communication.

Future Directions

Future research should consider the limitations of this thesis and advance ELM in the context of health communication, specifically binge drinking. One critical limitation of this study is the measure of behavioral intention rather than actual behavioral change. Therefore, future research should consider longitudinal approaches to explore if using athletes can prompt individuals to stop/prevent certain health behaviors. Subsequent research can also analyze if elaboration can lead to more accurate beliefs or attitudes (i.e.,

scientific knowledge). In other words, rather than just considering binge drinking to be dangerous, it would be interesting to see if elaboration can lead them to hold more factual information of its effects on multiple facets of life such as academics, personal relationships, health, etc.

Future research can also look into incorporating subjective norms within the framework of ELM. Since most health issues (e.g., smoking, binge drinking) are initiated through social influence, participants' perception of these behaviors can also influence their message processing. To do so, anti-binge drinking efforts can be studied through TPB, which places value on subjective norms as a factor of behavioral intention. Parasocial interaction was found to influence elaboration. Therefore, scholars can also look into how transportation and identification can enhance personal involvement which increases elaboration. While these concepts were studied in the extended-elaboration likelihood model, it does not examine these concepts through central or peripheral routes. Likewise, the discussion of race as an input variable or a peripheral cue further needs empirical investigation. While this thesis found no support that race functioned as either, the subject of the stimuli have had an effect (i.e., health messaging), such that attitudes were pre-existing (i.e., people are already aware that binge drinking is bad), and, thus, may prevent us from making compelling assertions.

Different message formats can have different effects. Therefore, future research can also consider manipulating message formats (e.g., narratives, gain-loss frames) to bring a comprehensive perspective. Likewise, professional athletes can be utilized since they can be more popular yet more polarizing. Finally, athletes are popular across the

globe; therefore, this thesis can be replicated in other countries to empirically determine their influence on public health measures beyond the United States' borders.

CHAPTER FIVE

CONCLUSION

The current thesis addresses a critical literature gap examining the role of athletes on the public's health attitudes and behaviors. To our knowledge, no study has considered this line of research through experimental methods. While communicating effective public health measures has been a concern in the United States for decades, utilizing athletes for resolving these issues was largely ignored. Thus, as a result, this thesis argues that athletes can play an essential role in shaping audiences' attitudes and behaviors toward detrimental health practices. Mainly, parasocial interaction is found to be a significant predictor of participants' elaboration. In other words, as their affective involvement with the athletes increased, participants showed more interest in analyzing the issue-relevant arguments in the message, which eventually manifested as intentions toward stopping or avoiding binge drinking in the future. Moreover, it is also promising that there were no racial effects in this relationship. Binge drinking is a significant concern on college campuses, where more than half of college students – also evidenced in this thesis – engage in this behavior. Therefore, this thesis asserts that using athletes for anti-binge drinking efforts can be highly effective for not only those actively engaging in that behavior but also those who do not binge drink, thus being vital in preventative health campaigns.

CHAPTER SIX

TABLES

Table 1

Participants' Demographics

Variable		<i>N</i>	%
1. Age		<i>M</i> = 19.48	<i>SD</i> = 1.18
2. Sex			
	Female	177	60.4%
	Male	116	39.6%
3. Race/Ethnicity			
	Caucasian	250	85.3%
	African American	12	4.1%
	Hispanic/Latino	11	3.8%
	Asian	13	4.4%
	Other	7	2.3%
4. Year in School			
	First Year	103	35.2%
	Second Year	124	42.3%
	Third Year	48	16.4%
	Fourth year	18	6.1%
5. Binge Drinking			
	Yes	162	55.3%
	No	131	44.7%
6. Membership in Fraternity/Sorority			
	Yes	107	36.5%
	No	186	63.5%
7. Intention to/Attend Tailgating Events			
	100% of them	75	25.6%
	At least 75% of them	92	31.4%
	At least 50%	49	16.7%
	At least 25%	42	14.3%
	None	35	11.9%

Note. (*N* = 293)

Table 2*Distribution of Participants*

	Condition	<i>n</i>	%
1.	Will Shipley		
	Strong Argument	13	4.4%
	Weak Argument	14	4.8%
2.	Phil Mafah		
	Strong Argument	15	5.1%
	Weak Argument	15	5.1%
3.	Brannon Spector		
	Strong Argument	14	4.8%
	Weak Argument	14	4.8%
4.	Frank Ladson Jr.		
	Strong Argument	14	4.8%
	Weak Argument	16	5.5%
5.	Will Putnam		
	Strong Argument	15	5.1%
	Weak Argument	16	5.5%
6.	Jordan McFadden		
	Strong Argument	15	5.1%
	Weak Argument	16	5.5%
7.	Jake Venables		
	Strong Argument	16	5.5%
	Weak Argument	14	4.8%
8.	Mike Jones Jr.		
	Strong Argument	16	5.5%
	Weak Argument	14	4.8%
9.	Bryan Bresee		
	Strong Argument	13	4.4%
	Weak Argument	15	5.1%
10	Myles Murphy		
	Strong Argument	13	4.4%
	Weak Argument	15	5.1%

Note. $N = 293$

Table 3*Descriptive Statistics and Correlations*

Factors	<i>M</i>	<i>SD</i>	α	1	2	3	4	5	6	7	8
<i>Involvement</i>	2.89	1.49	.88	1							
<i>Prior Knowledge</i>	5.26	1.11	.85	.16**	1						
<i>Elaboration</i>	5.22	.98	.93	.14*	.09	1					
<i>Attitudes</i>	6.13	1.03	.93	-.21**	-.14*	.05	1				
<i>Counter-Arguments</i>	2.60	1.25	.87	.18**	-.03	.03	-.28**	1			
<i>Behavioral Intention</i>	5.49	1.54	.97	-.35**	-.09	.19**	.46**	-.24**	1		
<i>Parasocial Interaction</i>	4.32	1.06	.86	.09	.11	.31**	.06	-.01	.08	1	
<i>Fandom</i>	5.13	1.57	.93	.19**	.04	.25**	-.01	.07	-.09	.53**	1

Note. ** $p < .01$. * $p < .05$

Table 4*Summary of Hierarchical Regression Analysis*

<i>Variables Entered</i>	<i>Elaboration</i>	
	β	<i>t</i>
<i>Block One</i>		
<i>(Demographics)</i>	$(R^2 = .11)$	
Binge Drinking	-.07	-1.20
Parasocial interaction	.24	3.63***
Clemson Fandom	.13	1.84
Fraternity/Sorority	-.06	-.96
<i>Block two</i>		
<i>(ELM Variables)</i>	$(\Delta R^2 = .02)$	
Involvement	.13	2.08
Prior Knowledge	.05	.80
<i>Block three</i>		
<i>(Interaction)</i>	$(\Delta R^2 \sim .00)$	
Interaction	.14	.45

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 5

OLS Regression Coefficients and Indirect Effects

Regression Model	B	SE	<i>t</i>	<i>p</i>	<i>LLCI</i>	<i>ULCI</i>
<i>Outcome: Unfavorable Attitude</i>						
<i>F</i> (1, 292) = .716, <i>p</i> = .398, <i>R</i> ² = .002						
Constant	5.862	.328	17.853	<.001	5.216	6.509
Elaboration (<i>a</i> ₁)	.052	.062	.486	.398	-.069	.174
<i>Outcome: Behavioral Intention</i>						
<i>F</i> (2, 291) = 44.466, <i>p</i> < .001, <i>R</i> ² = .23						
Constant	.038	.623	.061	.951	-1.188	1.264
Unfavorable Attitudes (<i>b</i> ₁)	.671	.077	8.736	<.001	.520	.822
Elaboration (<i>c</i> ')	.255	.081	3.143	<.01	.095	.415
<i>Indirect and Serial Indirect Effects</i>						
		Bootstrapped				
		SE	LLCI	ULCI		
<i>a</i> ₁ <i>b</i> ₁ (<i>X</i> → <i>M</i> → <i>Y</i>) =	.035	.049	.048	.141		

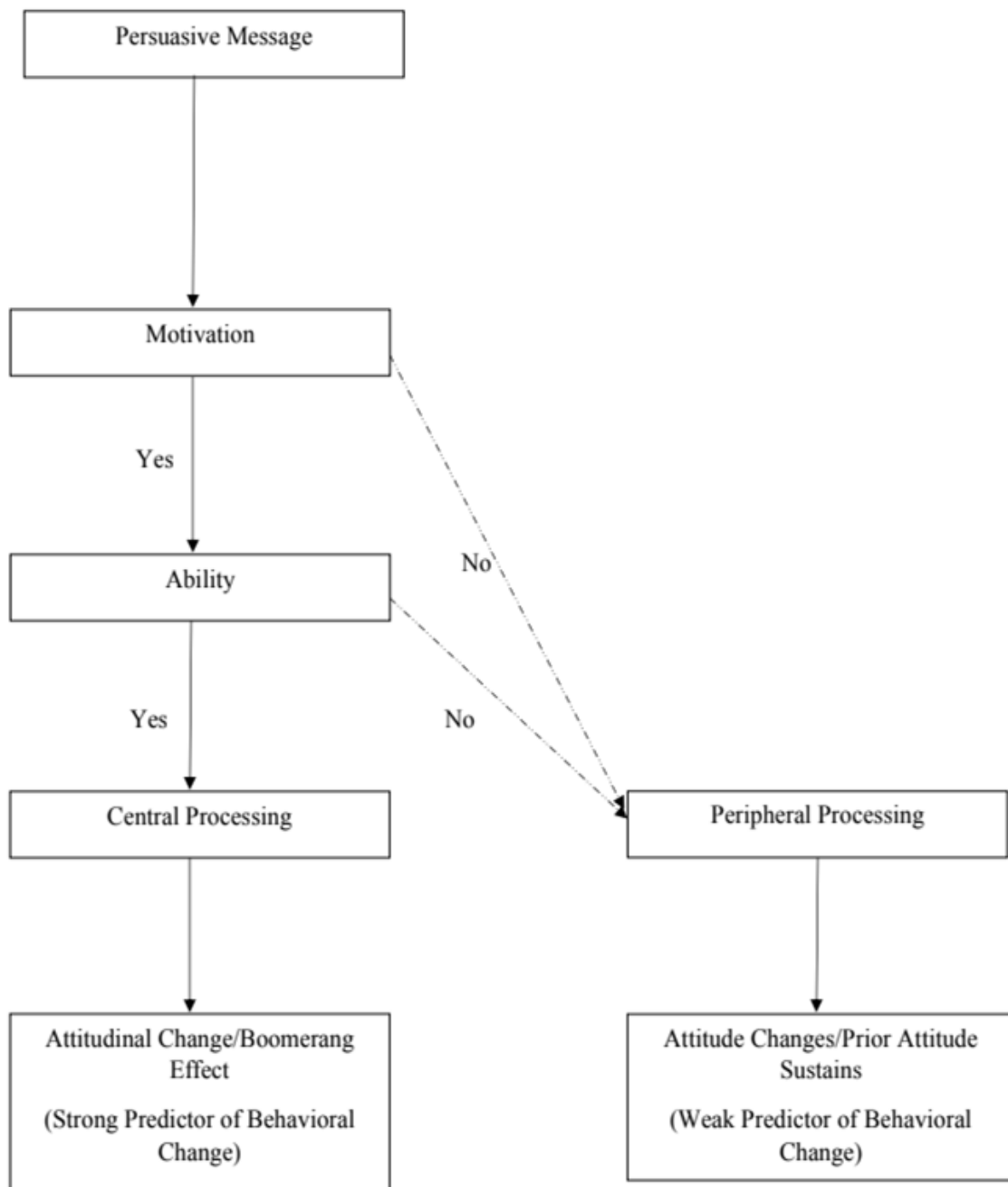
Note: Coefficients are unstandardized (B). Statistics generated using PROCESS in SPSS with 5,000 bootstrapped samples and 95% bias-corrected confidence intervals (CIs). *Lower and upper-level confidence intervals (LLCI; ULCI) do not include zero and thus indicate significant mediation. Coefficients and indirect effects shown represent unique variance accounted for by individual variables and indirect paths (i.e., while simultaneously controlling for other effects in the model). SE = standard error.

CHAPTER SEVEN

FIGURES

Figure 1

Visual model of Elaboration Likelihood Model



APPENDICES

Appendix A

Consent Letter

Information about Being in a Research Study at Clemson University

Athletes as Health Advocates: An Elaboration Likelihood Model to Identify their Influence on Public Health Measures

KEY INFORMATION ABOUT THE RESEARCH STUDY

Voluntary Consent: Dr. Gregory Cranmer is inviting you to volunteer for a research study. Dr. Gregory Cranmer is a professor at Clemson University conducting the study with Sai Datta Mikkilineni who is a graduate student at Clemson University.

Study Purpose: The purpose of this research is to understand your perceptions regarding a news article.

Voluntary Consent: Participation is voluntary, and the only alternative is to not participate. You will not be punished in any way if you decide not to be in the study or to stop taking part in the study. If you decide not to take part or to stop taking part in this study, it will not affect your grade in any way.

Activities and Procedures: Your part in the study will be to read a news article and answer the following questions about your perceptions of it.

Participation Time: It will take you about 15 minutes to be in this study.

Risks and Discomforts: We do not know of any risks or discomforts to you in this research study.

Possible Benefits: You may not benefit directly from taking part in this study. However, the results of this study will contribute to research in the area of media effects and health communication.

CLEMSON UNIVERSITY TITLE IX POLICY

As responsible employees under Clemson University Title IX policies, we are required to report incidents of discrimination based on sex, sexual harassment, or sexual violence involving a member of the Clemson University community.

INCENTIVES

For your participation in this study, you will receive extra course credit from the instructor who informed you of this study. The amount of extra credit will be 5 points added to your overall grade total.

PROTECTION OF PRIVACY AND CONFIDENTIALITY

The results of this study may be published in scientific journals, professional publications, or educational presentations. Participation in the study will only require providing demographic information and no name or other identification information will be asked for before, during, or after completing the online survey. Upon completion of the project, survey data will be kept for 5 years before being deleted and shredded, if the data is printed out. Data generated via participants' answers to the online survey will be downloaded and no identifying information will be collected. All computer files will be kept on a secured hard-drive in the office of the principal investigator. The information collected during the study could be used for future research studies or distributed to another investigator for future research studies without additional informed consent from the participants or legally authorized representative.

CONTACT INFORMATION

If you have any questions or concerns about your rights in this research study, please contact the Clemson University Office of Research Compliance (ORC) at 864-656-0636 or irb@clemson.edu. If you are outside of the Upstate South Carolina area, please use the ORC's toll-free number, 866-297-3071. The Clemson IRB will not be able to answer some study-specific questions. However, you may contact the Clemson IRB if the research staff cannot be reached or if you wish to speak with someone other than the research staff.

If you have any study related questions or if any problems arise, please contact Dr. Gregory Cranmer at Clemson University at gcranme@clemson.edu.

CONSENT

By participating in the study, you indicate that you have read the information written above, been allowed to ask any questions, and you are voluntarily choosing to take part in this research. You do not give up any legal rights by taking part in this research study.

By clicking on 'I agree', you agree that you are at least 18 years old, and consent for being part of the study.

[I Agree](#)

Appendix B

Strong Argument Condition



“Binge drinking is destructive” - [Athlete name]

[name’s] press conference highlights the issue of binge drinking

[Place]: [name], a popular Clemson football player and one of the top-ranked [position] in the nation, is tackling a new issue this fall; healthy and responsible drinking. Speaking to journalists on Thursday, [name] talks about his “Drink less. Live More.” initiative, a social media campaign that informs social media users about the difference between responsible drinking and binge drinking.

When asked why he felt the need to start such a campaign, he brings the attention toward his past experiences as a college adult. While noting the prevalence of this dangerous behavior, [name] said that almost 40% of college students binge drink, a trend which he calls as “troubling”.

He went on, “Binge drinking affects academic performance. For instance, studies demonstrate that for each drink consumed, it increases the likelihood of missing a class by 9% and lagging in schoolwork by 5.4%.” While the numbers may seem innocuous, it has a significant effect on academic performance considering how many credits a student takes in the course of their degree. In fact, heavy drinkers are less likely to graduate from college since it drastically affects their GPA, and, even if they graduate, their annual earnings are lower by 1.9% - 9.8%.

However, there are more serious repercussions for binge drinking. “For instance, one in two binge drinkers experience blackouts”, [name] points out. These individuals potentially engage in other dangerous behaviors such as vandalism, unprotected sex, and driving under influence, without even remembering participating in such acts. “Binge drinkers are 10 times more likely to develop alcohol use disorder (AUD), which has several deleterious effects including one on the brain”, he adds. AUD increases the likelihood of blackouts, memory losses, and, eventually, death.

When pressed if responsible drinking can have the same effects as binge drinking, “They’re really two different behaviors”, [name] responds. “Light to moderate drinkers are 26% less likely to develop heart diseases and reduces the risk of heart failure by

51%”. Indeed, research shows that responsible drinkers are extremely healthy compared to binge drinkers. “It is really important to drink in moderation”, he finally adds.

[name’s] informational campaign is expected to continue as he seeks to use his celebrity status to bring awareness and speak on important health issues, especially those that affect the youth.

Appendix C

Weak Argument Condition



“Binge drinking is destructive” - [Athlete name]

[name’s] press conference highlights the issue of binge drinking

[Place]: [name], a popular Clemson football player and one of the top-ranked [position] in the nation, is tackling a new issue this fall; healthy and responsible drinking. Speaking to journalists on Thursday, [name] talks about his “Drink less. Live More” initiative, a social media campaign that informs social media users about the difference between responsible drinking and binge drinking.

When asked why he felt the need to start such a campaign, [name] noted that he has seen too many people getting involved with this activity. He adds, “I’m not sure what the medical people say, but I guess binge drinking is really bad”.

He went on, “Binge drinking affects academic performance”. He provides some instances from his personal life that shows how binge drinking can affect education. “Some of my friends who binge drink regularly miss class and lag in their school work. Most of them have GPAs below 3.0”, [name] details. “I don’t even think they would get a job, even if they would, I’m sure they would earn way less than others”. Looking at his close circles, he concludes that binge drinking can have consequences on academics.

However, there are more serious repercussions for binge drinking. “Have you seen in movies how actors drink too much the night before and experience blackouts? Well, that is the same in real life” [name] points out. These individuals potentially engage in other dangerous behaviors such as vandalism, unprotected sex, and driving under influence, without even remembering participating in such acts. “Binge drinkers, as I said, lose their memory power, and just forget what they’re doing”, he adds.

When pressed if responsible drinking can have the same effects as binge drinking, “I guess they’re really two different behaviors”, [name] responds. “Isn’t it obvious? I’m sure responsible drinkers can possess a healthy heart. My grandpa drank little and lived for a century”. Indeed, research shows that responsible drinkers are extremely healthy compared to binge drinkers. “It is really important to drink in moderation”, he finally adds.

[name's] informational campaign is expected to continue as he seeks to use his celebrity status to bring awareness and speak on important health issues, especially those that affect the youth.

Appendix D

Athletes' pictures



Will Shipley



Phil Mafah



Brannon Spector



Frank Ladson Jr.



Will Putnam



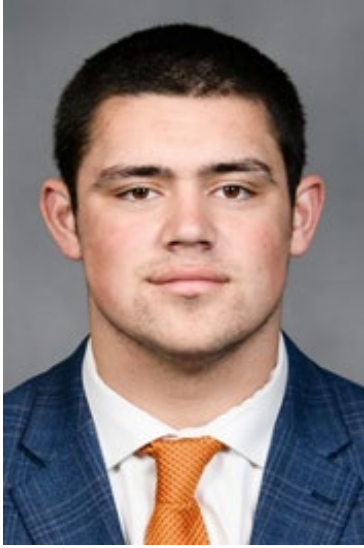
Jordan McFadden



Jake Venables



Mikes Jones Jr.



Bryan Bresee



Myles Murphy

Appendix E

Questionnaire

CONSENT PAGE

--NEW PAGE-- DEMO/DRINKING QUESTIONS

Filter Questions

1. What is your age? Please only write the numerical number in years.
 - a. {Open Textbox}
 - b. {Answers of 17 and below will be sent to end of survey}

Binge Drinking Questions

2. What is your sex?
 - a. Male
 - b. Female
 - c. Other *[Collect data but not included in analysis. This decision was made as the definition of binge drinking is dependent upon the replication of the sex binary. In other words, without a definitive answer we are unable to accurately assess if the person is a binge drinker]*

FOIL Questions [seeking to hide intention to assess actual binge drinking]

3. How often do you exercise?
 - a. Regularly
 - b. Sometimes
 - c. Rarely
 - d. Never
4. How many of these social media accounts do you own [select all that apply]?
 - a. Facebook
 - b. Instagram
 - c. LinkedIn
 - d. TikTok
 - e. Snapchat
5. How often do you consume 5/4 [Conditional based on answer to sex] drinks in a single occasion?
 - a. Daily
 - b. Multiple times per week, but not daily
 - c. Once a week
 - d. Once every few weeks
 - e. Once a semester
 - f. Never
6. Have you ever been part of a study abroad program?
 - a. Yes
 - b. No

7. How often do you use your mobile phone while driving?
 - a. Regularly
 - b. Sometimes
 - c. Rarely
 - d. Never
8. On average, how many hours do you spend sleeping per night?
 - a. 8hrs or above
 - b. 7hrs
 - c. 6hrs
 - d. 5hrs or below

-- NEW PAGE -- STIMULI

Introduction Directions: This study requires you to read a news article about an athlete's recent press conference. After reading, you will answer a few questions about your perceptions of the news article and opinions regarding its topic. Please read carefully.

[Randomly assigned to one of 20 experimental message conditions]

--NEW PAGE-- SURVEY

Involvement

Instructions: Please indicate the degree of involvement with the behavior of binge drinking.

For me, binge drinking is ...

Insignificant

Irrelevant to me

Not a concern to me

Non-threatening to me

Not applicable to me

Significant

Relevant to me

A concern to me

Threatening to me

Applicable to me

1

2

3

4

5

6

7

Ability

Instructions: Please indicate the degree to which you agree with each statement below in reference to your knowledge of binge drinking

Prior to reading this article, I was informed about

9. What constitutes binge drinking behavior
10. The effects of binge drinking on human health
11. The reasons people engage in binge drinking
12. The commonality of binge drinking
13. The potential consequences of binge drinking
14. The circumstance/contexts surrounding binge drinking

1	2	3	4	5	6	7
Not at all informed			Fully informed			

Elaboration

Instructions: Please indicate the degree to which you agree with each statement below.

While reading the article, I was:

15. Attempting to analyze the ideas being discussed
16. Attentive to the ideas being discussed
17. Deep in thought about the ideas being discussed
18. Concerned with the ideas being discussed
19. Expending a good deal of cognitive effort
20. Focused on the ideas being discussed
21. Exerting your mind
22. Doing your best to think about what was written
23. Reflecting on the implications of the arguments
24. Searching your mind in response to the ideas
25. Putting forth mental effort

Strongly Disagree	Disagree	Slightly Disagree	Undecided	Slightly Agree	Agree	Strongly Agree
----------------------	----------	----------------------	-----------	-------------------	-------	-------------------

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Attitudes

Instructions: Please indicate the degree to which you agree with each statement below in reference to your attitude toward binge drinking.

- | | |
|----------------|---------|
| 26. Good | Bad |
| 27. Beneficial | Harmful |
| 28. Wise | Foolish |
| 29. Clean | Dirty |

30. Healthy

Sick

1 2 3 4 5 6 7

Counter-Arguments

Instructions: Please indicate your agreement with each statement below.

While reading the message, I was:

- 31. Actively resisting the athlete's reasoning in the article
- 32. Coming up with arguments that would defeat the athlete's reasoning in the article
- 33. Looking for flaws in the article
- 34. Trying to figure out the athlete's bias on the issue
- 35. Wishing I could correct the factual errors being reported in the article

Strongly
Disagree

Disagree

Slightly
Disagree

Undecided

Slightly
Agree

Agree

Strongly
Agree

1 2 3 4 5 6 7

Behavioral Change Intent (Measure)

Instructions: Please indicate your agreement with each statement below.

- 36. I intend to stop or avoid binge drinking in the near future
- 37. I predict I will stop or avoid binge drinking in the near future
- 38. I plan to stop or avoid binge drinking in the near future

Strongly
Disagree

Disagree

Undecided

Agree

Strongly
Agree

1 2 3 4 5

Parasocial Interaction

Instructions: Please indicate your agreement with each statement below.

- 39. When I am watching [Athlete name], I feel as if I am a part of his team

40. I feel sorry for [Athlete name] when he makes a mistake
41. I see [Athlete name] as a natural, down-to-earth person
42. I look forward to watching [Athlete name] performance on any sports media
43. If there were a story about [Athlete name] in a newspaper or magazine, I would read it
44. I would like to meet [Athlete name] in person
45. I find to [Athlete name] be attractive

Strongly Disagree Disagree Slightly Disagree Undecided Slightly Agree Agree Strongly Agree

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Credibility

Instructions: Please rate [Athlete name] on the following

46. Competent – Incompetent
47. Intelligent – Unintelligent
48. Well-educated – Poorly Educated
49. Professional – Unprofessional
50. Experienced – Inexperienced
51. Qualified – Unqualified
52. Sincere – Insincere
53. Honest – Dishonest
54. Just – Unjust
55. Unselfish – Selfish
56. Fair – Unfair
57. Qualified – Unqualified
58. Moral – Immoral
59. Ethical – Unethical
60. Responsible – Irresponsible
61. Considerate – Inconsiderate

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Clemson Fandom

Instructions: Please indicate your agreement with each statement below.

- 51. I consider myself to be a Clemson football fan
- 52. My friends see me as a Clemson football fan
- 53. I believe that following Clemson football is the most enjoyable form of entertainment
- 54. My life would be less enjoyable if I would be able to follow Clemson football
- 55. Being a Clemson football fan is very important to me

Strongly Disagree	Disagree	Slightly Disagree	Undecided	Slightly Agree	Agree	Strongly Agree
----------------------	----------	----------------------	-----------	-------------------	-------	-------------------

1

2

3

4

5

6

7

--NEW PAGE--Final Demographics

Demographics

- 1. What is your major?
 - a. Type here
- 2. What is your current year in school?
 - a. Freshman
 - b. Sophomore
 - c. Junior
 - d. Senior
- 3. What is your ethnicity?
 - a. Caucasian
 - b. African American
 - c. Hispanic/Latino
 - d. Asian
 - e. Native American/Alaskan Native
 - f. Other
- 4. Are you a member of any Fraternity/Sorority?
 - a. [1] Yes
- 5. [0] NoIf invited, how many tailgating events do you go/intend to go to?
 - a. 100% of them
 - b. At least 75% of them
 - c. At least 50% of them
 - d. At least 25% of them
 - e. None
- 6. What was the race of the athlete in the article that you read?
 - a. Caucasian

- b. African American
- c. Asian
- d. Hispanic/Latino
- e. Native American
- f. Other

Appendix F

Debrief Form

Additional Information Permission to Use Information Collected in a Research Study at
Clemson University

Athletes as Health Advocates: An Elaboration Likelihood Model Approach to Identify their Influence on Public Health Measures

Thank you for taking part in this study. You were told at the beginning of the study that we will study your perceptions regarding a sports media article. Now that you have completed the survey, we want to let you know the true purpose of the study. You have received one of 20 fictitious news articles that we have developed for this research. We are interested to know if athletes can be influential in the matters of public health, specifically if college-athletes can persuade college students to stop/prevent binge drinking. We did not tell you that the news article is fictitious or you would receive one of many different news articles because that revelation cannot accurately capture your responses.

If you would like a copy of the results of the study once it is completed, you may contact Dr. Gregory Cranmer, the principal investigator, at gcranme@clemson.edu.

Although we have collected your personal information, your survey responses are not linked to your identity. Therefore, we will not be able to destroy your responses.

Please remember that some of your classmates may also be signed up for this study. If they knew that this news article is fake or if they would receive one of many, then that could negatively affect the results of this study, thereby wasting your time and ours. Therefore, we would appreciate it if you would not share this additional information with others who may be taking part in this study.

Thank you again for taking part in this study!

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